



# **REFERENCE MANUAL**

## **SYSTEM 6000**

**SAFLOK**  
**TRAINING**  
**AND**  
**REFERENCE MANUAL**  
**SAFLOK SYSTEM 6000**  
**WINDOWS VERSION 3**

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# Section 1

Introduction to System 6000

## 1.1 Welcome to System 6000

System 6000 is a battery-operated guestroom door-locking system designed to offer the highest possible level of security to a property.

There are two types of locks you can choose from;

**Magnetic reader lock** – A magnetically encoded keycard is provided to each guest upon check-in.

**RFID Lock** – A guest is provided a RFID keycard or FOB to present to the locks upon check-in.

When this keycard is used at the lock, a circuit board within the lock reads the code and releases the locking mechanism, allowing the guest to depress the handle and enter the room. When a new keycard is made for a subsequent guest, and this keycard is used at the lock, the previously issued keycard will no longer be valid. This feature has the effect of changing lock and combination with each new guest that occupies a room.

From inside the room, the lock provides a dead bolt or privacy button, helping to ensure both privacy and security.

## 1.2 System 6000 Components

The basic system includes the System 6000, keycard encoder, and the SAFLOK electronic door locks and keycards. An Emergency Lock Power Supply (ELPS) and Lock Programmer and Interrogator (LPI) Interface Probe and a handheld LPI Device are also included. Multiple keycard encoders may be purchased for as many check-in stations as required.

The System 6000 is loaded onto the front-desk computer(s). The program is used to generate keycard-coding information and to keep track of the room numbers and key assignments, user access codes, key combinations, and a history of all system transactions. The computer(s) are connected directly to key encoding stations for performing the key-making transactions.

An LPI (Lock Programming/Interrogating) Device is also required. The LPI Device also has limited memory capacity, and is used solely for programming and interrogating locks. Lock code information is provided to the LPI Device by the main computer.

### Keycard Encoding Stations

The Keycard Encoder receives the keycard encoding information from the main computer or terminal. When a keycard is inserted/swiped into the encoder, the information is digitally encoded onto the magnetic strip or memory chip located on the keycard.

For radio frequency identification (RFID locks), the RFID credential is placed on the encoder, and the information is encoded via radio waves.

## **1.2 System 6000 Components (Continued)**

### **SAFLOK Locks**

Several lock models are available to function with System 6000. Saflok has two types of locks which use different key media. The first type is a Magnetic reader lock that functions in conjunction with Magstripe keys. The second lock type is RFID locks that use Mifare RFID keys and FOB's.

The locks contain a circuit board, which is connected to a battery pack. When a properly encoded keycard is used at the lock, the circuit board reads the code on the keycard and sends an electronic signal to release the locking mechanism. The guest then has approximately 5-6 seconds to turn the lock handle and enter the room. If the lock handle is not turned within the allotted time, the locking mechanism will automatically return to the locked position. The guest will then reinsert the magstripe keycard or present the RFID key to gain access to the room.

Most SAFLOK locks feature a 1" steel dead bolt and a throw dead locking latchbolt with anti-theft feature. When the handle is turned from inside the room, a panic feature retracts both the latch and the dead bolt. With the automatic dead bolt ADB® feature, the locks have an automatic dead bolt feature that projects a 1" dead bolt each time the door is returned to the closed position, providing continuous deadbolt latching security. A privacy button or switch can be activated from inside the room, preventing property personnel from entering the room, except in emergencies.

### **Keycards**

The keycard is the messenger to the lock, and provides the lock with the lock coding information. The keycard carries the code information provided by the computer and keycard encoder. When a properly encoded keycard is inserted or presented to the lock and removed, the lock circuit board updates the code information in its memory, rendering previously issued keycards invalid.

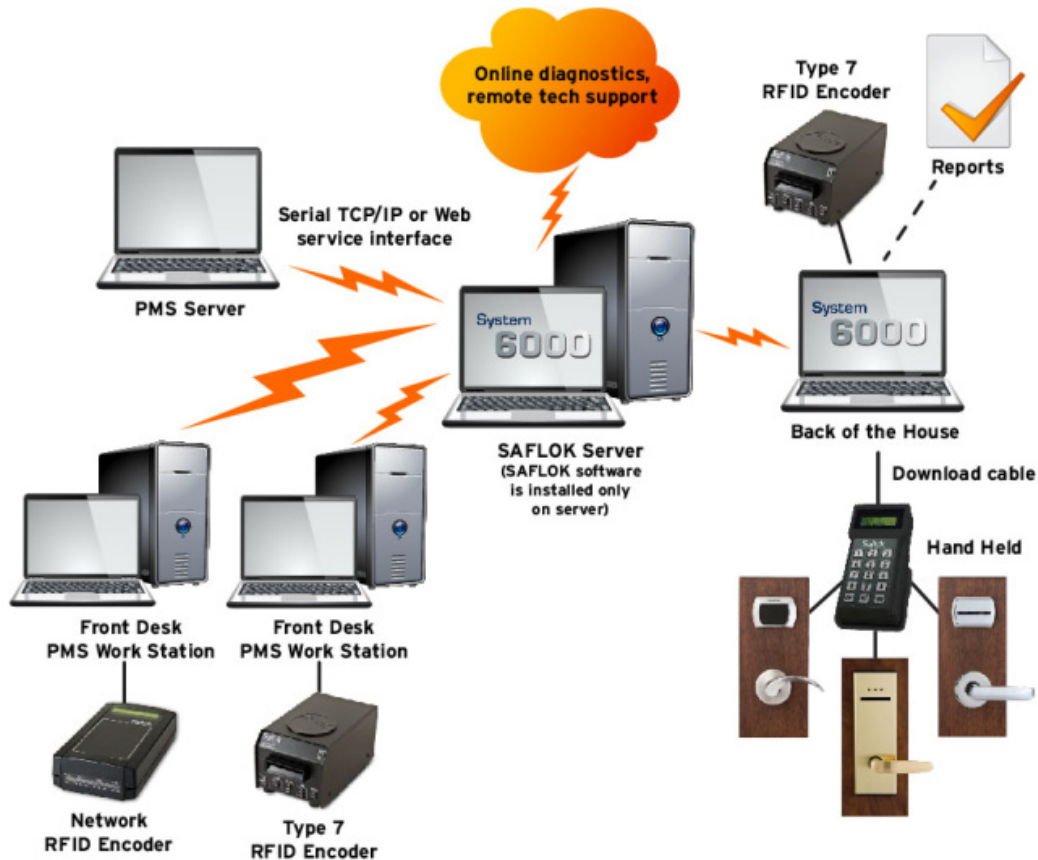
### **Emergency Lock Power Supply (ELPS)**

The Emergency Lock Power Supply is used to restore battery power to a lock that has insufficient internal battery power. When inserted into the lock, and inserting a cut valid keycard, a lock with a dead battery can be activated. This capability eliminates the need to forcibly remove a lock from a door because it has lost power. Once the door has been opened, the batteries can be replaced.

### **Lock Programmer and Interrogator (LPI) Interface Probe / ELPS power override**

The Lock Programmer and Interrogator Interface Probe serves as an interface between the LPI Device and the lock. The probe can be used to program locks or to interrogate a lock when it is necessary to obtain a history of the keycards that were used to access the lock. The smartcard probe also allows an emergency override option when a dead battery condition occurs on a lock. Once the door has been opened, the batteries can be replaced.

## 1.2 System 6000 Components (continued)



## 1.3 Minimum Windows Equipment Requirements & Recommendations

Refer to the following page #4

# SAFLOK System 6000™ Property Network Diagram

## Minimum Equipment Requirements & Recommendations

### SAFLOK™ Server

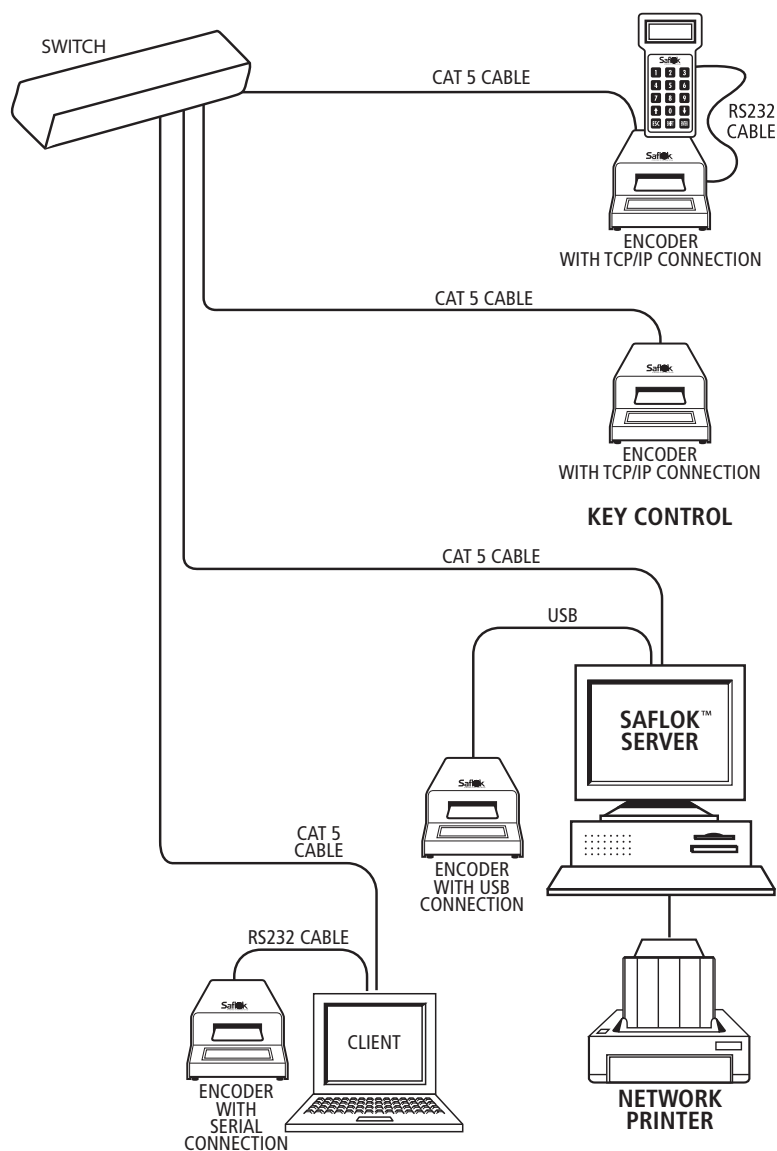
- Operating system: Windows XP Professional or Windows Server 2003 (Windows Server 2003 is required if over ten [10] workstations); appropriate server and client licensing is required
- Minimum hardware specifications: Multi-core, 2 GHz or greater CPU / 4GB or greater RAM / 100GB available hard drive space
- Virtual Machine environments are supported with the following minimum resource allocation: Multi-core, 2 GHz or greater CPU allocation / 4GB or greater RAM / 100GB available hard drive space
- If more than two (2) workstations are to be used with Saflok, an Ethernet network hub or switch is required
- If connecting an encoder and/or handheld LPI device directly to server, at least one (1) USB port must be available for encoder connection and at least one (1) dedicated Serial port for handheld LPI connection
- If including a Serial property management system (PMS) interface, at least one (1) dedicated Serial port must be available. TCP/IP interface support is also available.
- Internet access is required to enable SAFLOK remote real-time support via the web
- Anti-virus software is highly recommended
- UPS and surge protection with equipment warranty are suggested

### Client Workstation(s)

- Operating system: Windows XP, Vista, or Windows 7
- Minimum hardware specifications: 1 GHz processor, 1GB of RAM, and 10GB available hard drive space
- If connecting an encoder and/or handheld LPI device directly to workstation, at least one (1) USB port must be available for encoder connection and/or at least one (1) Serial port for handheld LPI connection; encoders can also utilize a TCP/IP (network) or Serial connection
- Anti-virus software is highly recommended
- UPS and surge protection with equipment warranty are suggested

### Notes:

- All network installations and maintenance are the responsibility of the individual customer and not SAFLOK.
- Due to the wide performance variability of different manufacturers' hardware, SAFLOK cannot guarantee software compatibility with all computers. If you require a list of computers that SAFLOK has tested and deemed software-compatible, please contact SAFLOK customer service at 1.800.999.6213.
- The customer is responsible for completing all software updates (e.g., Windows operating system & anti-virus protection).
- If using a Serial interface with a Virtual Machine, the Virtual Machine host computer must have an available dedicated Serial port that can be allocated to the Saflok Server Virtual Machine.



(This diagram assumes that an Ethernet 10/100 multi-port hub is installed on the network.)

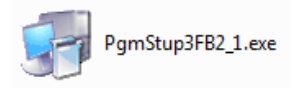


## SECTION 2

System 6000 Installation and Configuration

## 2.1 Program Installation-Saflok Server

You can use the installation CD, or you may copy the installation CD to the Saflok server or any other computer on the network.



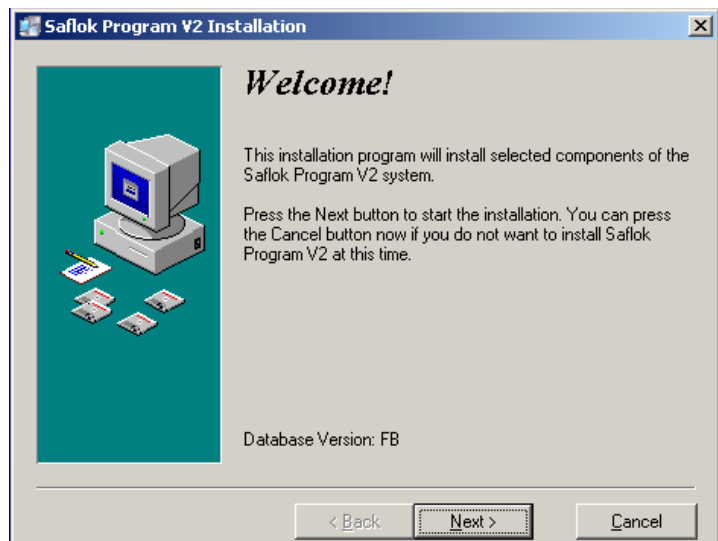
1. If you are using the CD, simply insert it into the computer you wish to install the software on and the installation process will begin automatically. \*If installing over the network, browse to the folder where the software is located, and double-click PgmStup3FB2\_1.exe, and the installation process will begin.



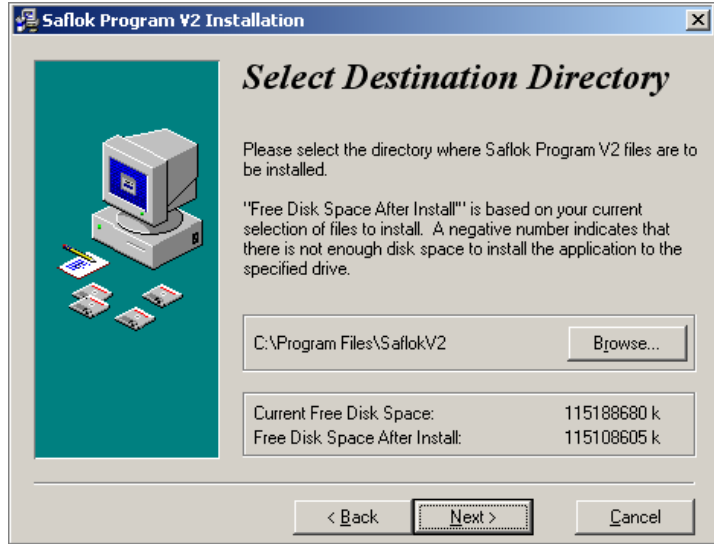
2. The setup program will inform you if there are any database engines currently installed and running, and if so, it will stop them automatically.



3. Click **Next** to continue.



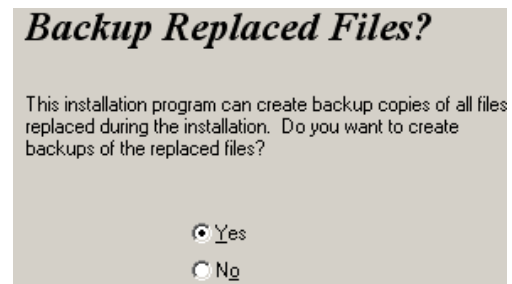
4. Select the destination directory. Click **Next** to use the default.



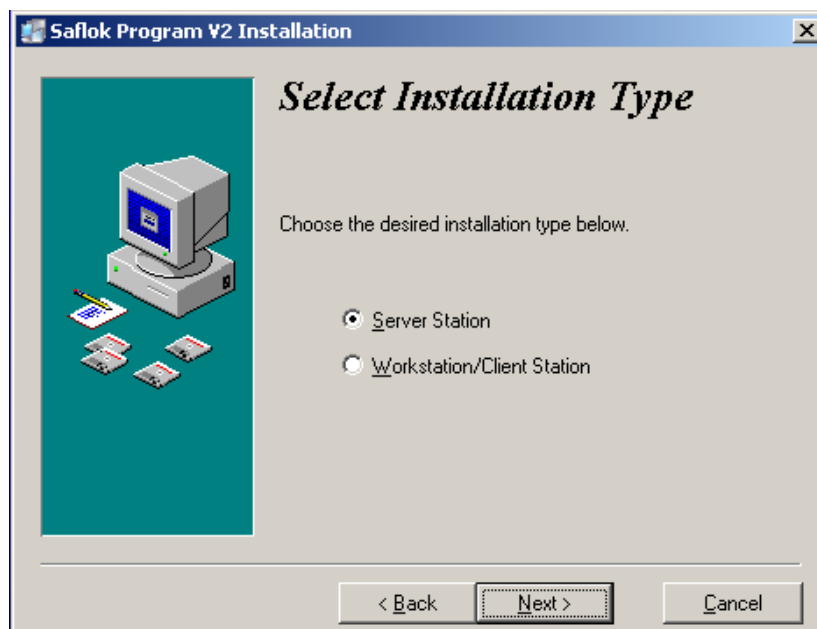
5. \*If you will be installing Messenger at this property, click **Yes**. Otherwise click **No**.



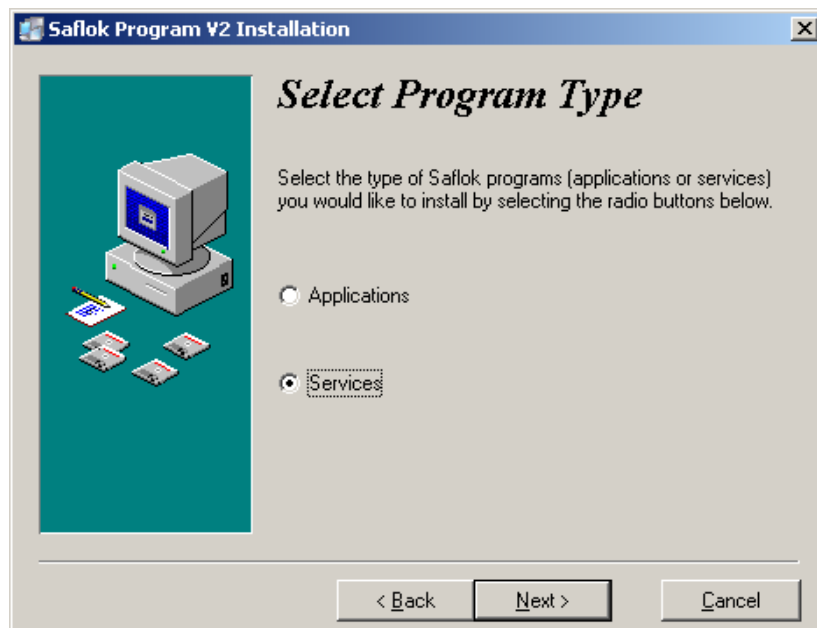
6. Select whether you would like to backup replaced files.  
This is only necessary if you are re-installing or upgrading the software and want to keep the old files. For a first – time installation, select **No** and click **Next**.



7. Select the Server Station installation type, and click **Next**.



8. Select the Program Type. The default installation type is Services. Select **Next**.

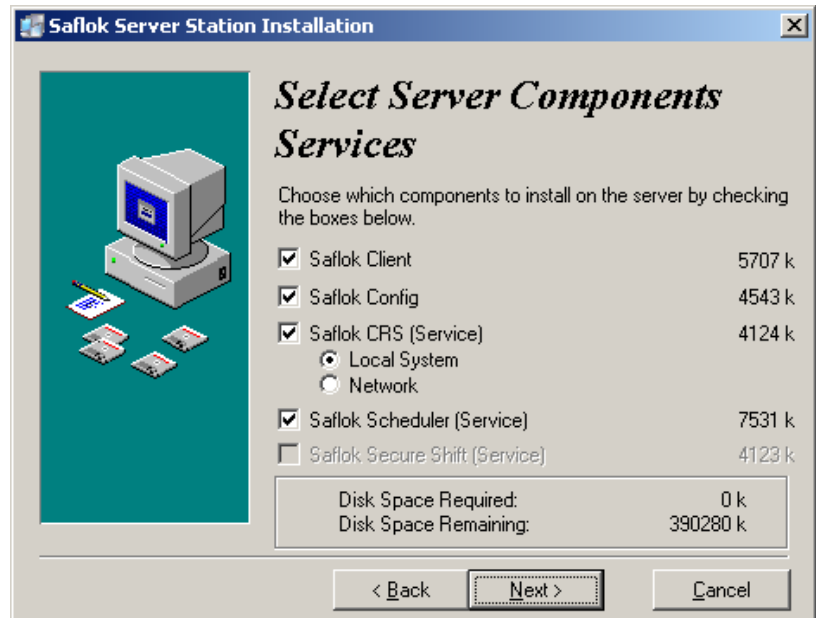


9. By default, the setup program will install Saflok Client, Config, CRS, and Scheduler. You have the option to install SecureShift server as well. These settings should generally not be modified. Select **Next**.

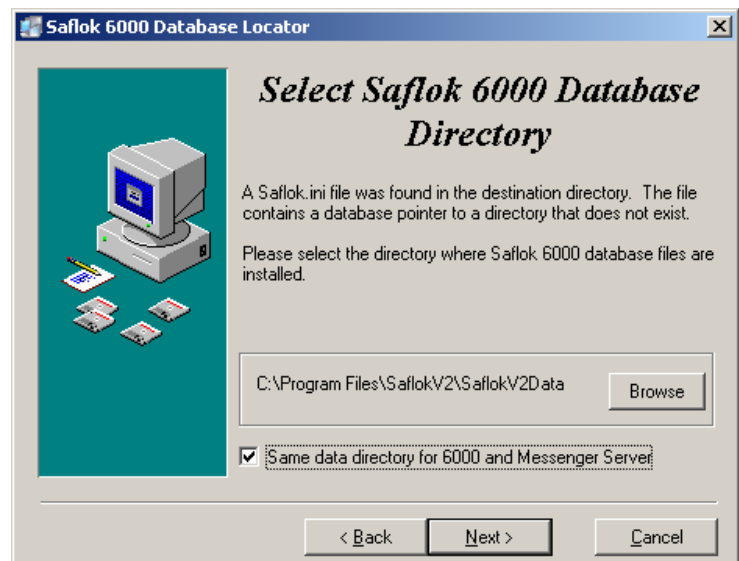
- Saflok Client is the program you use to make keys.
- Saflok Config is for modifying the database, and is generally only used by Saflok technicians.
- Saflok CRS program handles communications to LPIs and encoders.
- Saflok Scheduler performs a backup of the database at Specified intervals.

○ Saflok SecureShift server is only needed at properties that have SecureShift, but do not have the PMS disk.

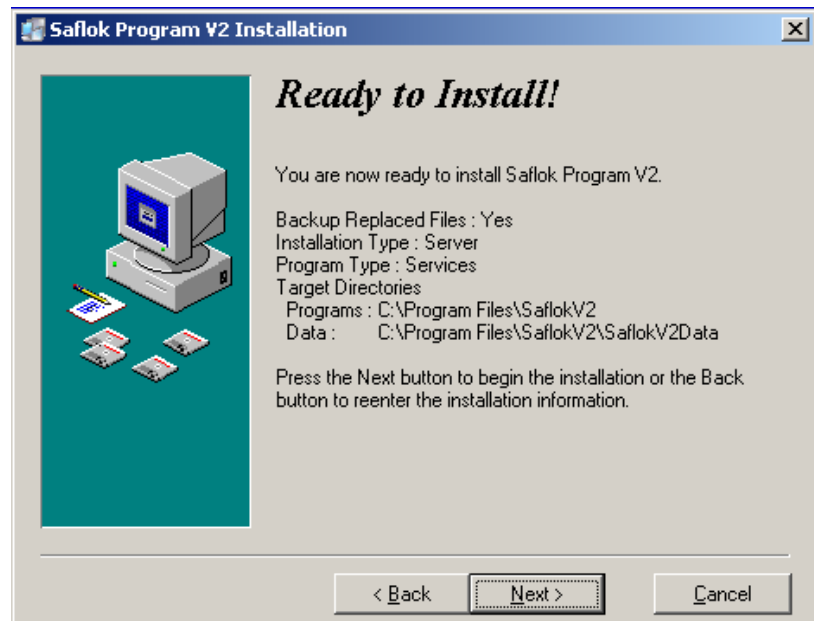
*Note: if IRS is installed from the PMS disk, SecureShift server is not needed.*



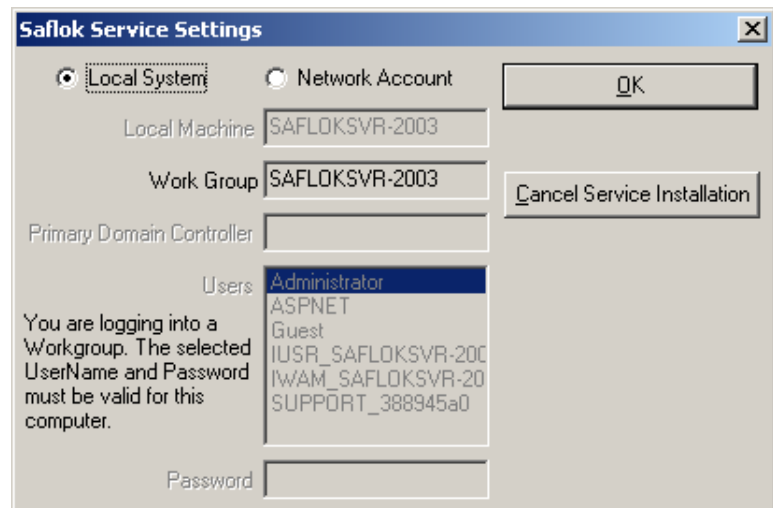
10. The default database folder is: C:\ProgramFiles\SaflokV2\SaflokV2Data. If you would like to change the path, click the Browse button and select the folder to store the database files in. If you are installing Messenger, check the box for "Same data directory for 6000 and Messenger Server". Click **Next** to continue.



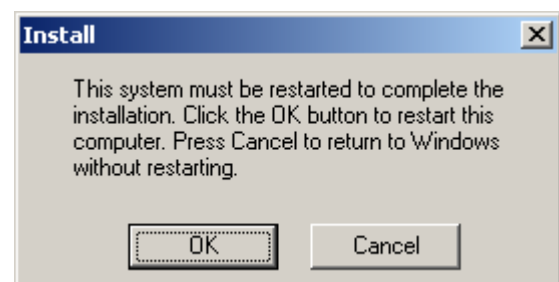
11. Verify that you have the correct Installation Type, Program Type, and Target Directories. Click **Next** to continue.



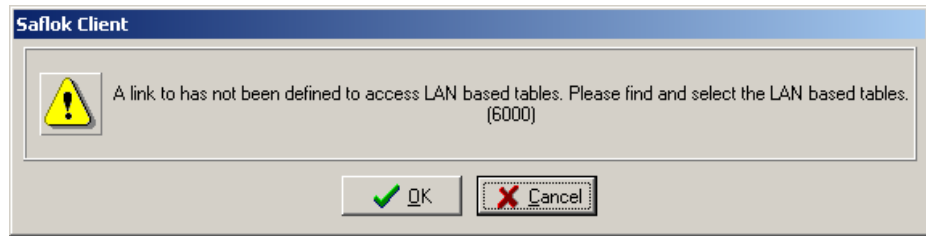
12. Select the Logon Type for the Scheduler service. In most cases, you will select Local System. You will only select Network Account if the Scheduler will be backing up to another computer on the network. In that case, select the account you will use from the list and enter the password.



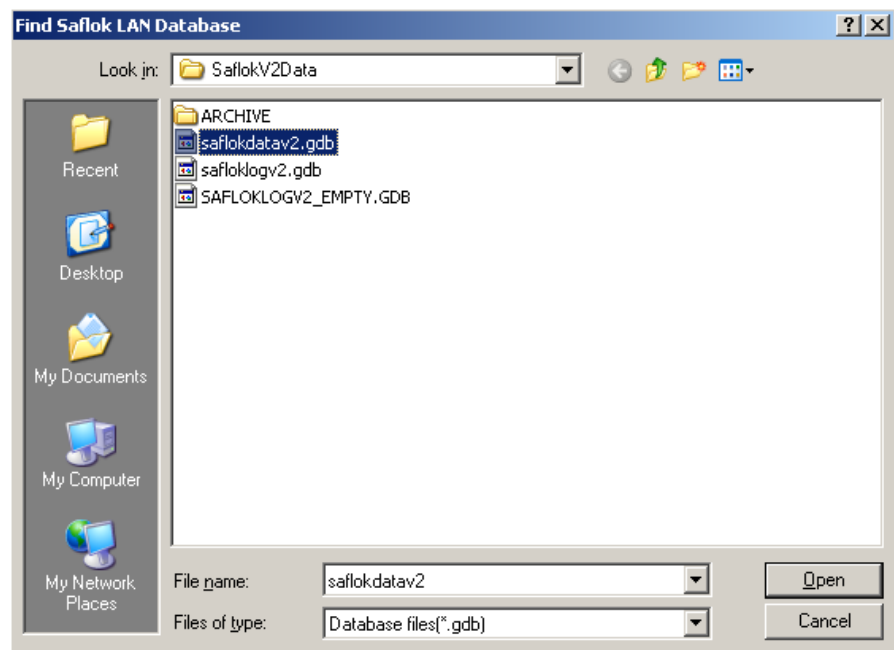
13. After the install process is complete, click **OK** to reboot the computer.



14. Upon rebooting, the CRS program will start automatically. It will prompt you to set a link to the database files. Click **OK**.



15. Browse to C:\Program Files\SaflokV2\SaflokV2Data (or the directory you created during the install process). Click on SaflokDataV2.GDB, and click **Open**.



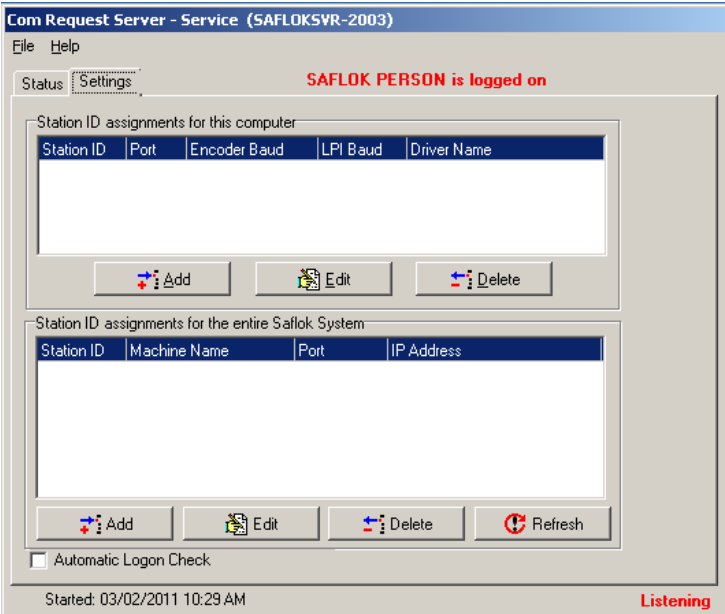
Software installation is now complete. Follow the instructions below to configure the CRS, Scheduler and Service Launcher.

## 2.2 CRS Configuration

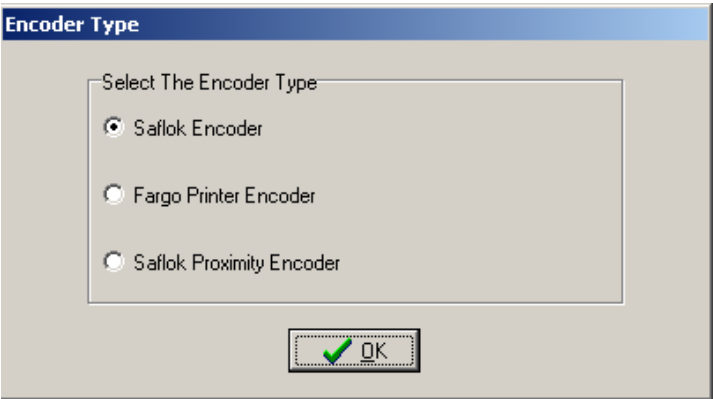
- 1. Open the CRS by double-clicking the CRS icon from the system tray.
- 2. Click File-Logon. Enter username SETUP and password PASSWORD.



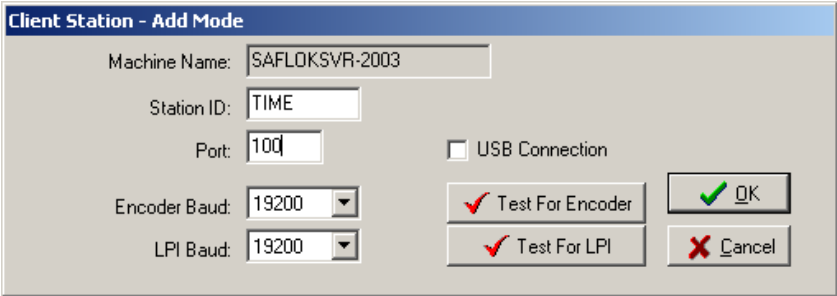
- 3. Click the Settings tab, and then click the **Add** button under the “Station ID assignments for this computer” box.



4. Select Saflok Encoder for the encoder type, and click **OK**.



5. Enter TIME for the Station ID and 100 for the Port. Click **OK** to save the station. Click File-Minimize to minimize the CRS window.



## 2.3 Scheduler Configuration

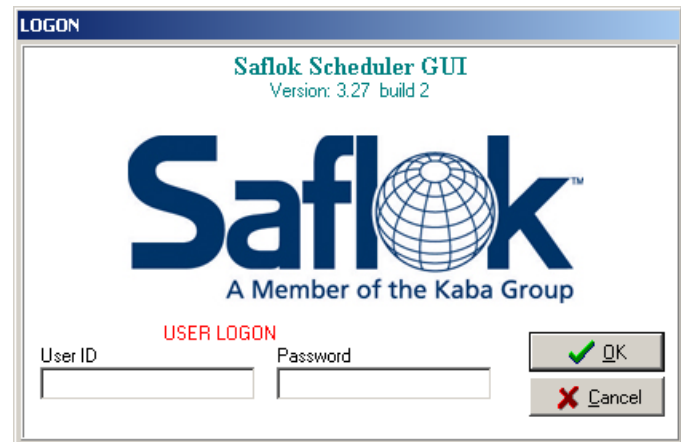
Next, you will need to configure the Saflok Scheduler. This program creates a backup of the database at a specified time each day. By default, this time is 3:00AM. It also creates an archive of the transaction log file to keep it manageable. This is performed at the same time as the backup.

### 2.3.1 Scheduler Archive Configuration

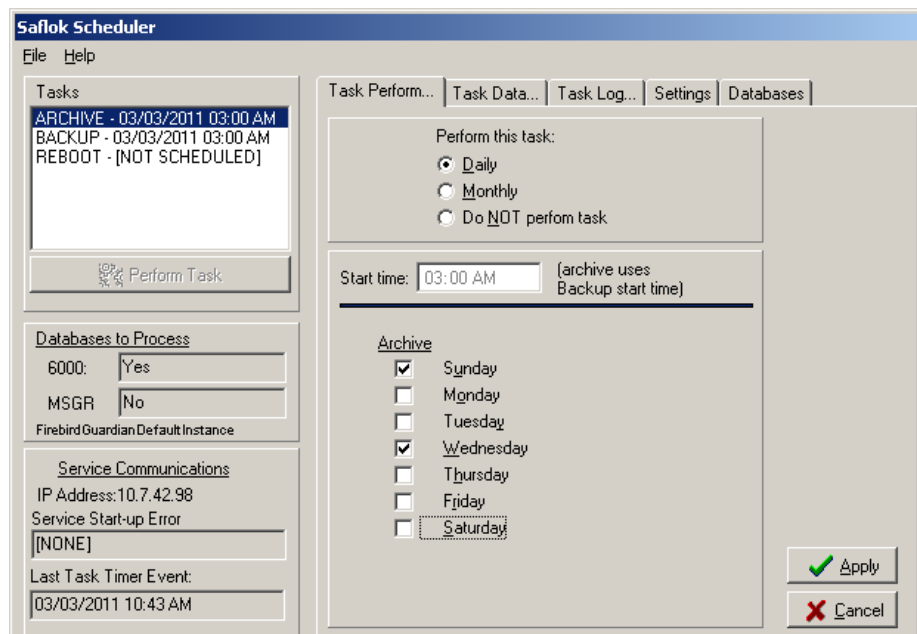
1. To begin, double-click the Scheduler Icon from the system tray.



2. Click File-Logon and log on using the username and password, then click **OK**.



3. Click Archive under the Tasks section. On the Task Perform tab, set "Perform this task:" to **Daily**. Set the "Archive" days of the week to Sunday and Wednesday. Click **Apply**.



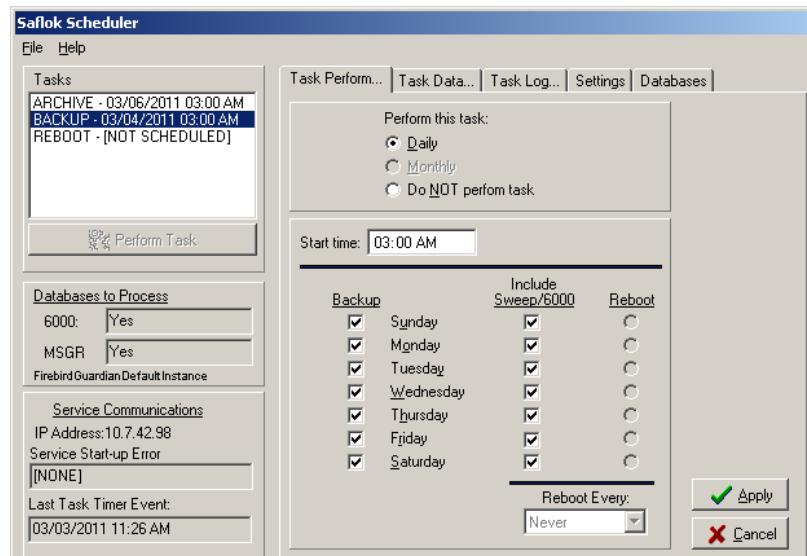
4. Click the Task Data tab. Select either Saflok 6000 or Saflok Messenger. Set the Archive Record Threshold and Archive Month Count for each database and click **Apply**.

- Archive record threshold is one of the criteria Scheduler uses to determine if an Archive is necessary. The default setting is 20000. In this case, when Scheduler scans the Transaction Log file and it has more than 20000 transaction records, it will also check the Archive Month Count to see if it should create an archive. If there are less than 20000 records in the database, it will not perform an archive.
- Archive Month Count is the number of months that you want to keep in the current log file; anything older than this setting will get archived. The default setting is 3 (only 1, 2, or 3 months selected). In this case, if there are over 20000 transaction records and they are older than 3 months, Scheduler will create an archive file.
- If there are 20000 records, and they are all under 3 months old, an archive will not be created. Similarly, if the records are older than 3 months but there are fewer than 20000, an archive will not be created.
- The recommended settings for the Messenger database are 10000 records and 1 Month. As there are typically many hundreds or thousands of records per day that are stored in the Messenger transaction log file (Saflokmsglogv2.gdb).
- Once Scheduler has determined that an archive needs to be performed, it will archive the records from the Safloklogv2.gdb file, and put them into an ARC\_SAFLOKLOG####.gdb file.
- Once an archive file has been created, and a transaction history report is run that spans into the archived records, you will get 2 or more different reports, illustrated below. The top report would be from the Current database, and the second report is from the archive.

## 2.3.2 Scheduler Backup Configuration

Next, we will configure the Backup settings.

1. Click on the “Backup” entry under the “Tasks” field. Then, click “Daily” under “Perform this task:”

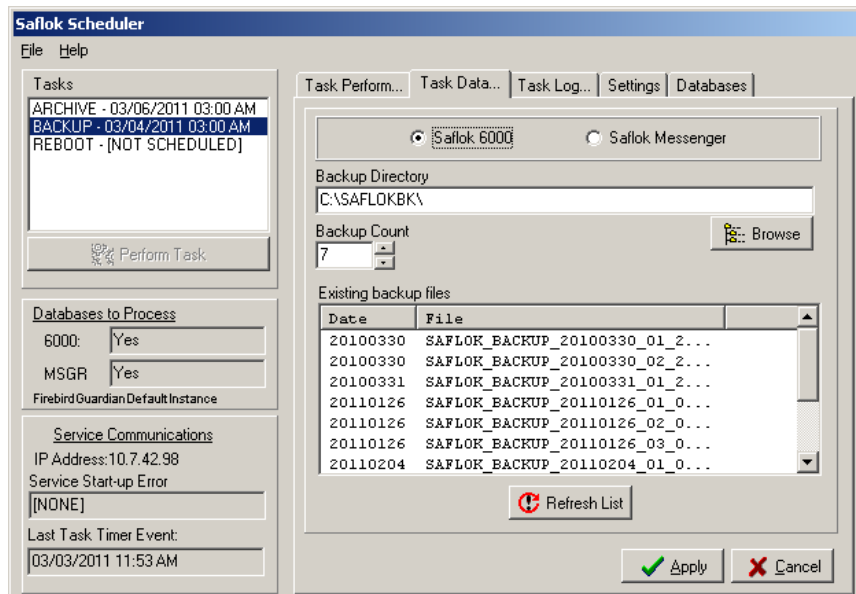


- This setting will configure the backup task to run every day, at the time specified in the “Start time” field. By default, this is 3:00AM. A backup usually takes around 15-20 minutes. Keys cannot be made during this time. Choose a time that will interfere with the property’s operations the least. Check all of the boxes for each day of the week, and also check the boxes for “Include/Sweep 6000”. The Sweep performs extra maintenance and cleanup on the database.

2. Next, click the “Task Data” tab. In the “Backup Directory” field, select where you want the database backups to be stored.

3. Click browse and select the folder/drive you wish to store the backups in.

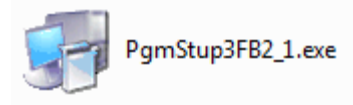
**The best practice is to backup to an external location, such as a network drive or USB flash drive. If neither is available, then you must create a folder on the local hard disk to store the backups.**



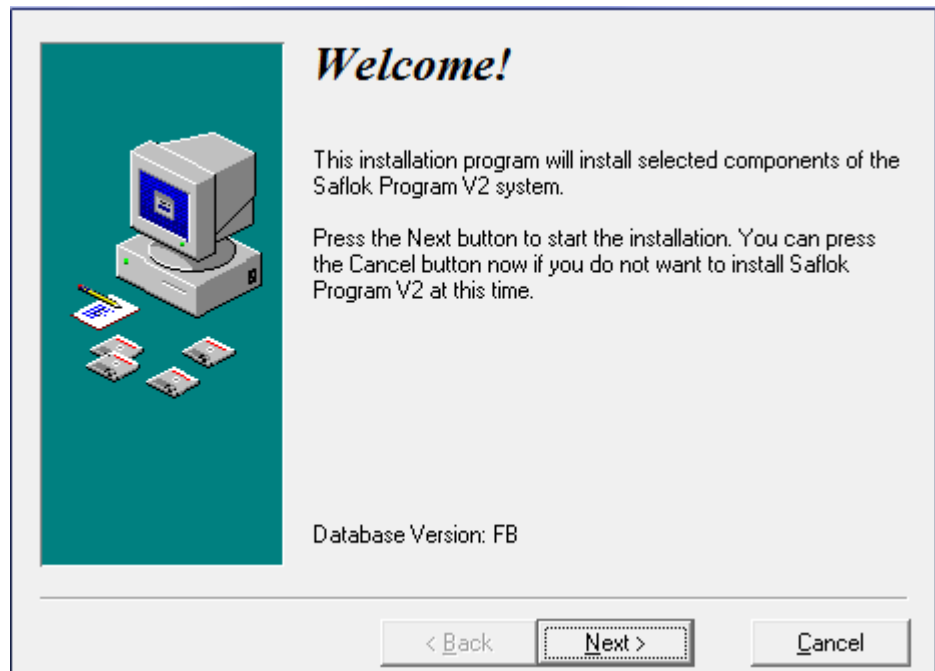
- By default, the Backup Count is set to 7. This determines the number of backups that are stored in the Backup Directory. It is recommended to leave this setting on the default. When the number of backups reaches the Backup Count number, the newest backup will replace the oldest backup.
4. When finished, click **Apply** to save the settings. The Scheduler is now configured properly.

## 2.4 Saflok-Client Installation Procedure

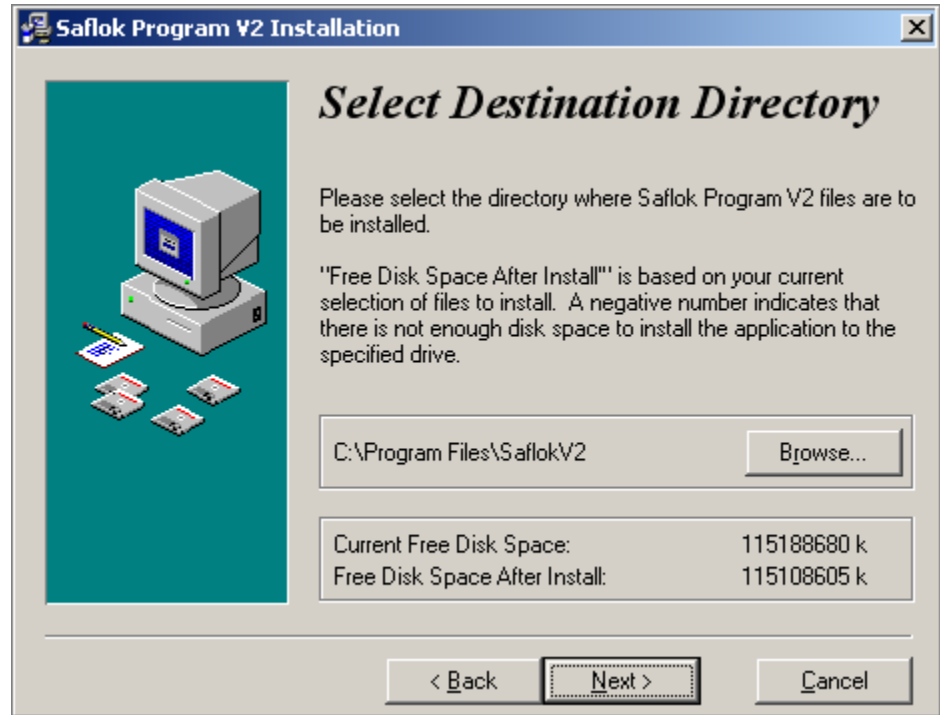
1. If you are using the CD, simply insert it into the computer you wish to install the software on, and the installation process will begin automatically. If installing over the network, browse to the folder where the software is located, and double-click PgmStup3FB2\_1.exe, and the installation process will begin.



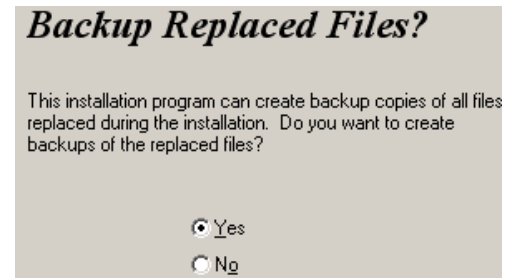
2. Click **Next** to continue.



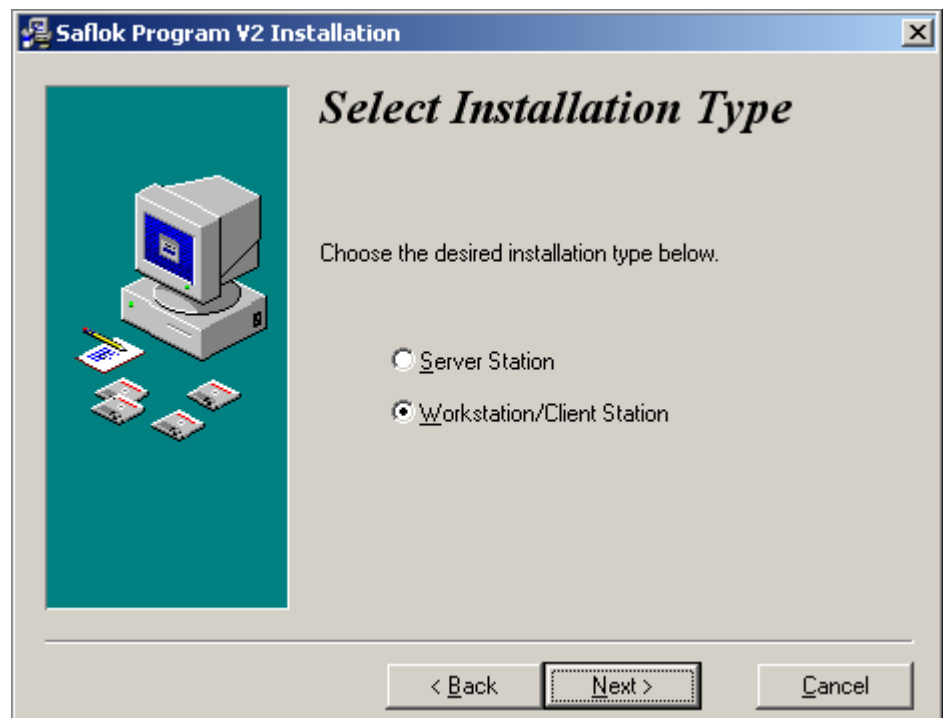
3. Select the destination directory. Click **Next** to use the default.



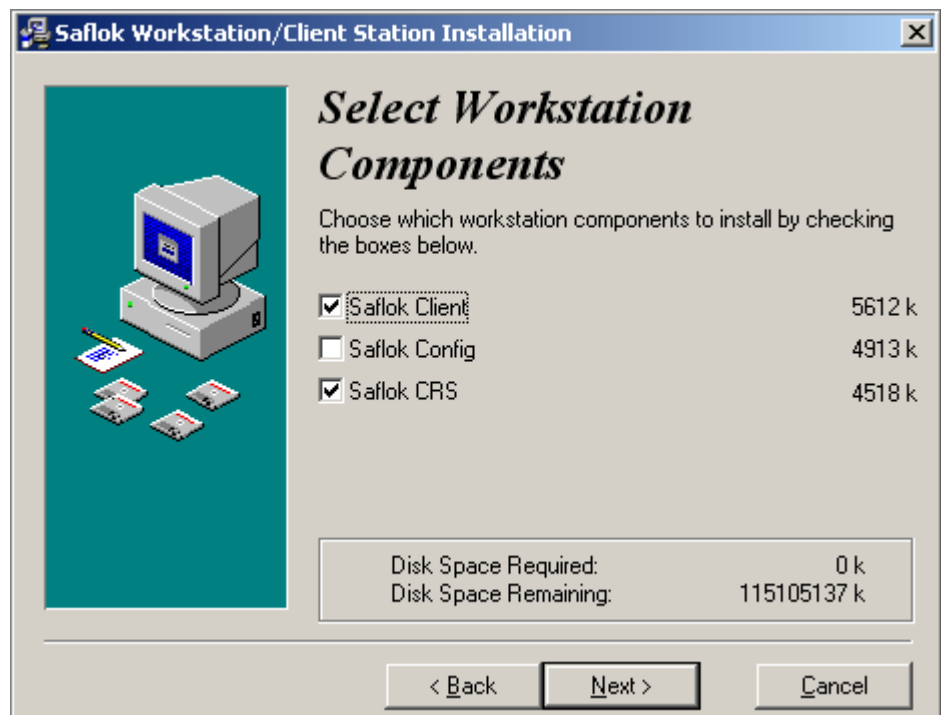
4. Select whether you would like to backup replaced files. This is only necessary if you are re-installing the client software. For the first installation, you may select No and click **Next**.



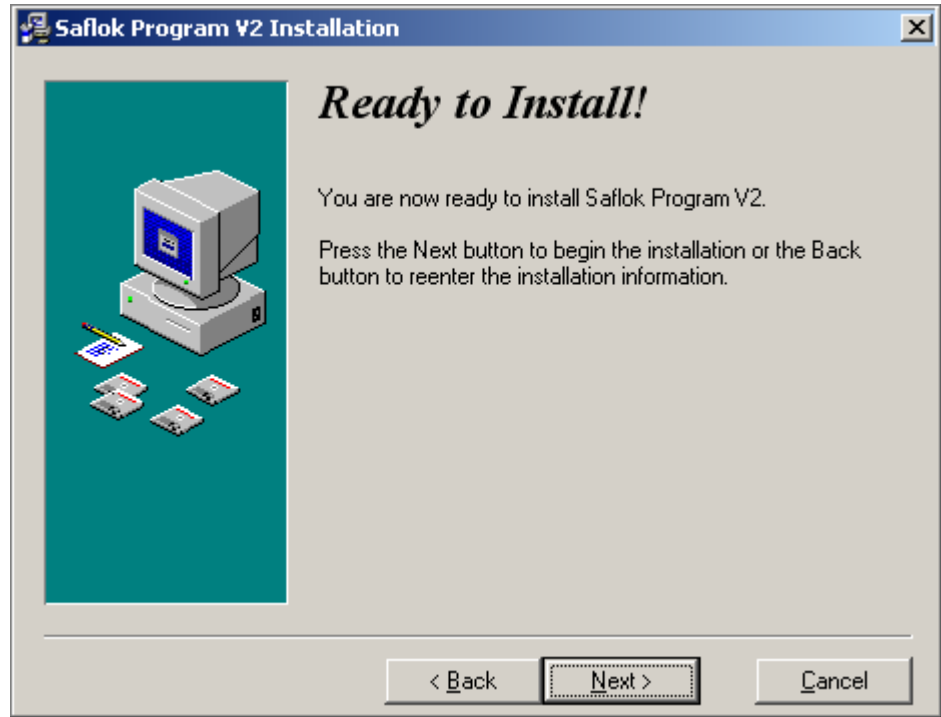
5. Select the installation type. Since this is a workstation, you will need to select "Workstation/Client Station". Click **Next**.



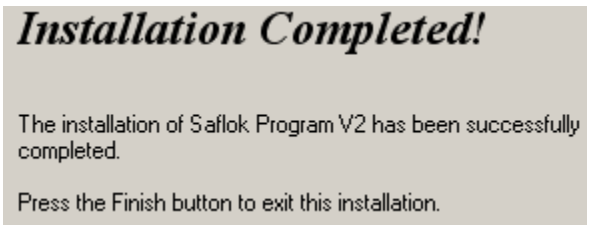
6. Next, select the software components you wish to install. Once complete, select **Next**.
  - Saflok Client is the program you use to make keys.
  - Saflok Config is for modifying the database, and is generally not needed on workstations.
  - Saflok CRS program allows the computer to communicate with any USB or Serial encoders, and is used to configure encoder / LPI station numbers.



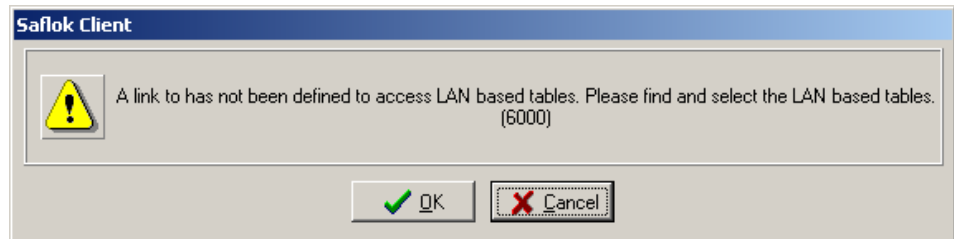
7. You are now ready to install. Click **Next** to start the file copy process.



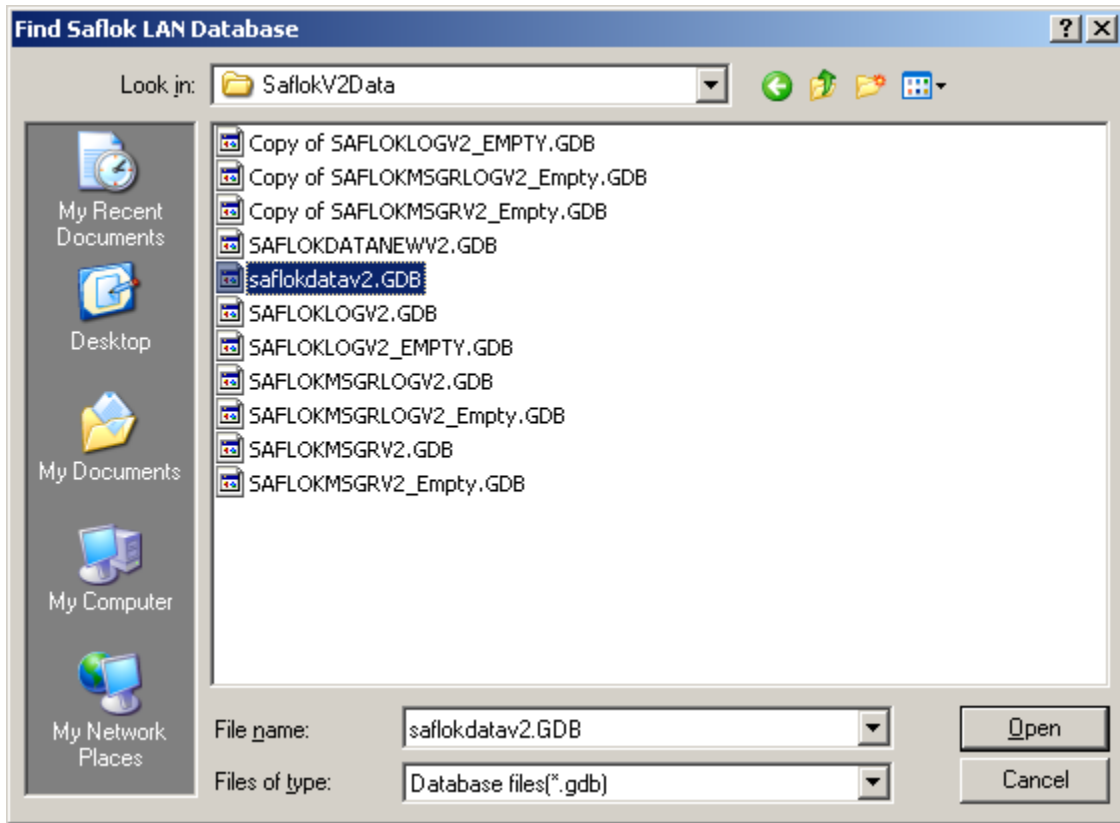
8. After the installation is completed, click **Finish**.



9. Next, launch the Saflok Client program. The software will ask you to find the LAN based tables (the database). Click **OK**, and a browse box will be displayed.



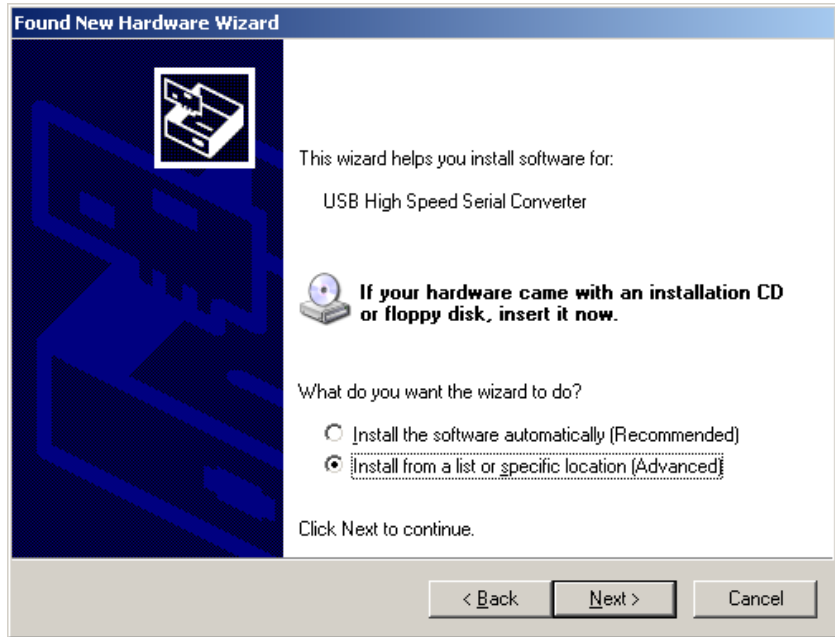
10. You may browse to the SaflokV2Data folder on the server (which should be shared on the network), or you can use the UNC or IP path in the File name field (i.e. <\\SAFLOKSERVER\SaflokV2Data> or <\\192.168.1.99\SaflokV2Data>). As shown below, select the SAFLOKDATAV2.GDB file, and click **Open**.



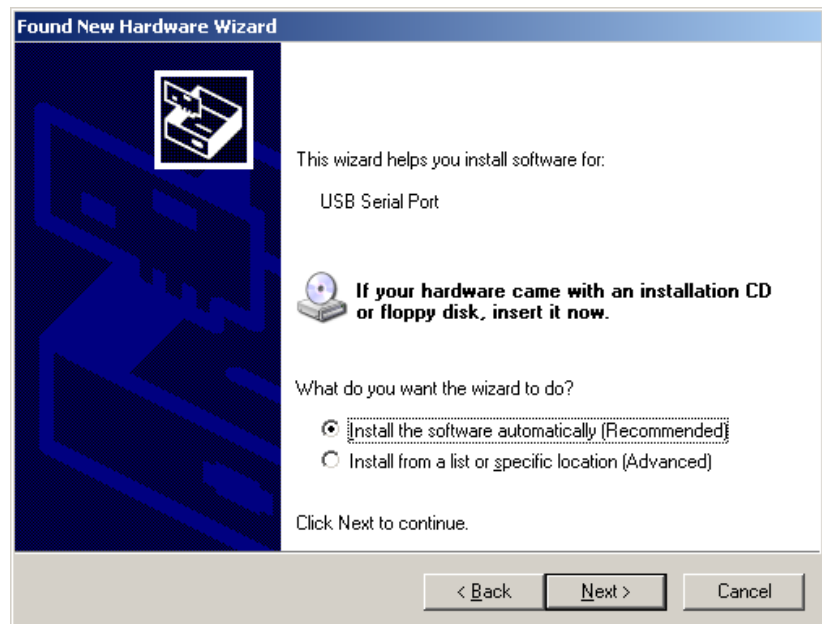
## 2.5 Configuring a USB Encoder

1. Plug power and the USB cable into the encoder. Plug the USB cable into the computer.

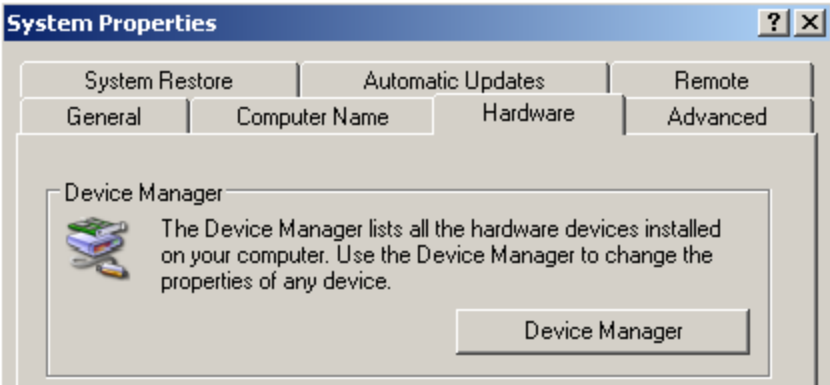
2. Windows will recognize the new hardware, and ask for a driver. The driver is located on the Saflok installation CD, in the Drivers\Insertion and Motorized Encoder USB Drivers folder. It will install the driver for the USB High Speed Serial Converter.



3. Windows will then prompt you to install the driver for the USB Serial port. Windows will need the drivers for it as well. Browse to the Drivers\Insertion and Motorized Encoder USB Drivers folder on the CD again.



4. After the driver installation is completed, check the device manager to determine which COM port it is on. (Go to Control Panel-System-Hardware Tab-Device Manager.



5. Expand the Ports section. Look for USB Serial Port (COM#). Take note of the number, you will need it when you add the encoder station to the system.



6. Double click on the CRS icon in the system tray.

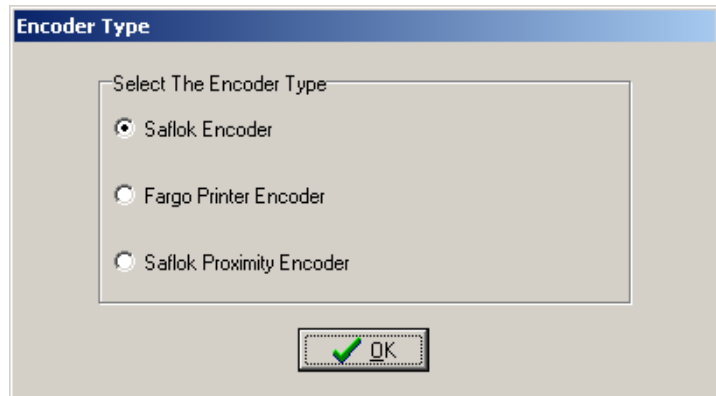


7. Click **File**, and then **Log on**. Enter your Username and password, and then click the settings tab.

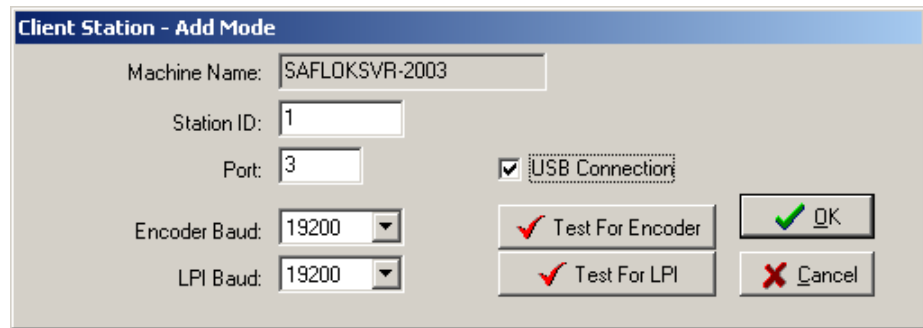
8. Click **Add** under the Station ID assignments for this computer section.



9. Select Saflok Encoder, and click **OK**.

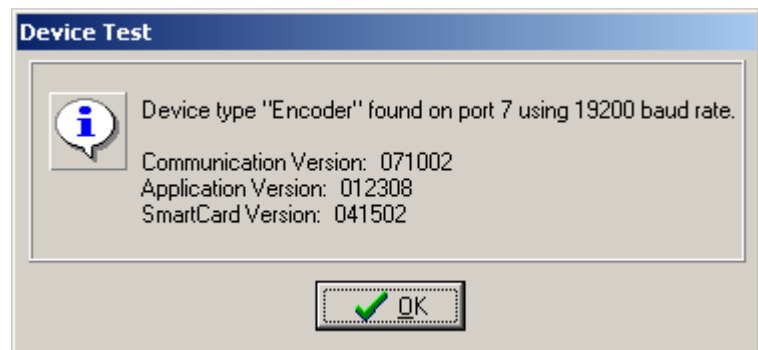


10. Enter the Station ID number you wish to give this encoder.
11. Enter the COM Port number from the Device Manager listing (i.e. if USB Serial Port = COM3, enter 3 in this field.)



12. Check the USB Connection box. The Encoder baud rate should be left on the default of 19200. **Click Test For Encoder.**

13. If the encoder is communicating properly, you will see a success message. Click **OK** to continue, and click OK again to save the encoder settings.



The encoder is now ready to be used.

## 2.6 Configuring a TCP/IP Encoder

1. Double click on the CRS icon in the system tray.



2. Click **File**, and then **Log on**.  
Enter your Username and password, and then click the settings tab.

3. Click the **Add** button under the Station ID assignments for the entire Saflok System.

Com Request Server - Service (SAFLOKSVR-2003)

File Help

Status Settings **SAFLOK PERSON is logged on**

Station ID assignments for this computer

Station ID	Port	Encoder Baud	LPI Baud	Driver Name
TIME	100	19200	19200	

Add Edit Delete

Station ID assignments for the entire Saflok System

Station ID	Machine Name	Port	IP Address
TIME	SAFLOKSVR-2003	100	10.7.42.98

Add Edit Delete Refresh

☐ Automatic Logon Check

Started: 03/02/2011 10:29 AM **Listening**

4. Enter the desired station ID for the encoder.

**\*Do not change the port number.**

Network Station - Add Mode

Machine Name: <NEW ENTRY>

Station ID:

Port: 5264

Encoder IP Address: 10\_7\_43\_

☒ Test For Encoder ☒ OK ☐ Cancel

Network Encoder Type

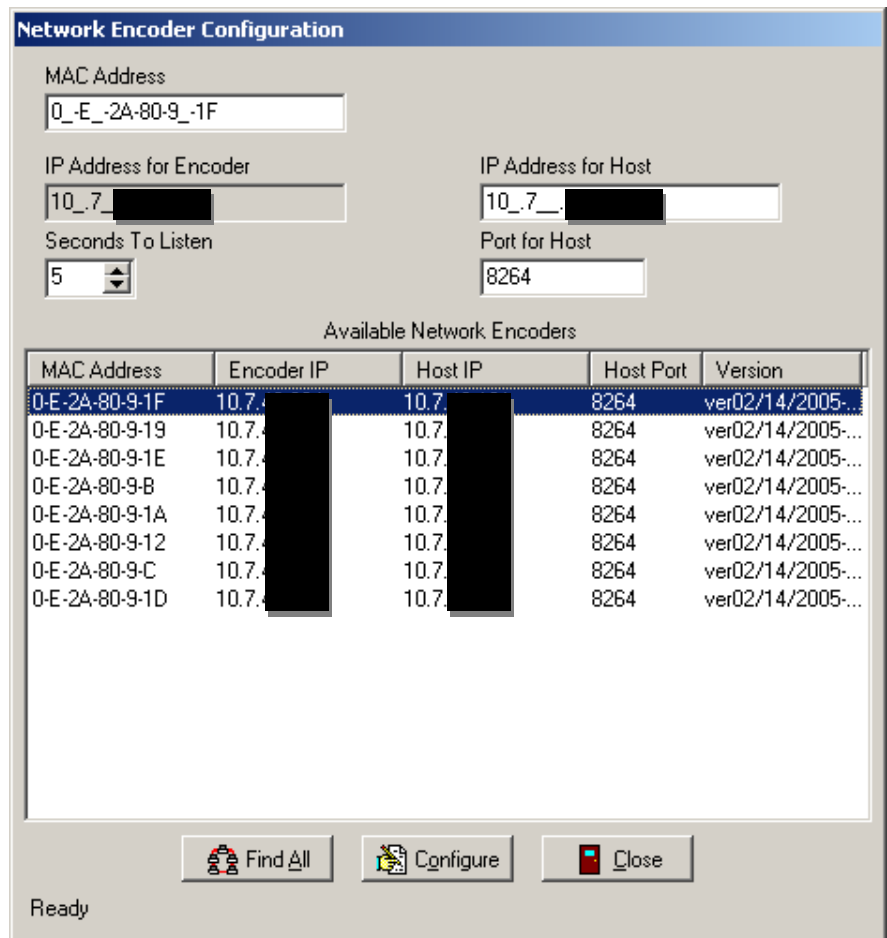
☒ Standard ☐ Datacard

Advanced

5. Enter the desired IP address for the encoder, and click **Advanced**.

6. Click the **Find All** button. This will search the network for all available IP Encoders, and list them by MAC Address. Each encoder has a label on the bottom of the unit that shows its MAC address.

7. Find the encoder you wish to configure in the list, and double click on it. Click **Configure**.



**Network Encoder Configuration**

MAC Address: 0\_E\_-2A-80-9\_-1F

IP Address for Encoder: 10\_7\_

IP Address for Host: 10\_7\_

Seconds To Listen: 5

Port for Host: 8264

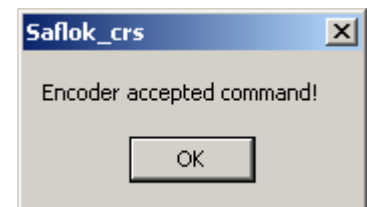
Available Network Encoders

MAC Address	Encoder IP	Host IP	Host Port	Version
0-E-2A-80-9-1F	10.7.	10.7.	8264	ver02/14/2005-...
0-E-2A-80-9-19	10.7.	10.7.	8264	ver02/14/2005-...
0-E-2A-80-9-1E	10.7.	10.7.	8264	ver02/14/2005-...
0-E-2A-80-9-B	10.7.	10.7.	8264	ver02/14/2005-...
0-E-2A-80-9-1A	10.7.	10.7.	8264	ver02/14/2005-...
0-E-2A-80-9-12	10.7.	10.7.	8264	ver02/14/2005-...
0-E-2A-80-9-C	10.7.	10.7.	8264	ver02/14/2005-...
0-E-2A-80-9-1D	10.7.	10.7.	8264	ver02/14/2005-...

Ready

Find All Configure Close

8. You will receive a message that the encoder accepted the command. Click **OK** to continue, and then click Close. Reset power to the encoder in order for the changes to take effect.

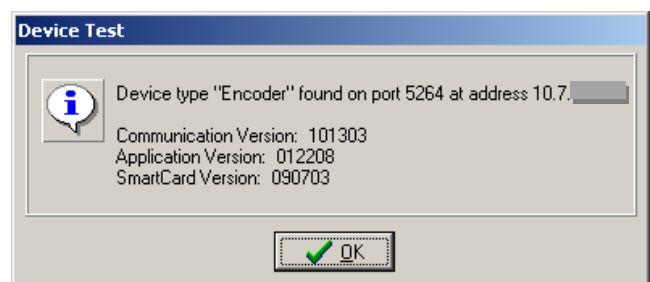


9. After the encoder has finished powering up, click the **Test For Encoder** button.



10. If the configuration is correct, you will see a success message. Click **OK** to continue, and then click **OK** to save the encoder settings.

The encoder is now ready to be used.

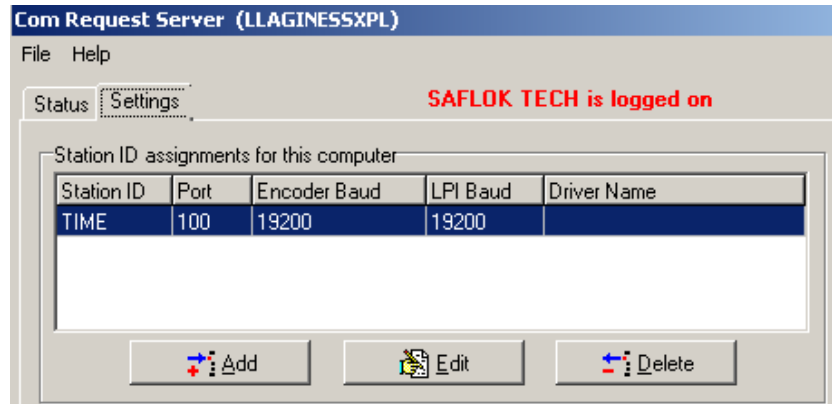


## 2.7 Configuring an LPI

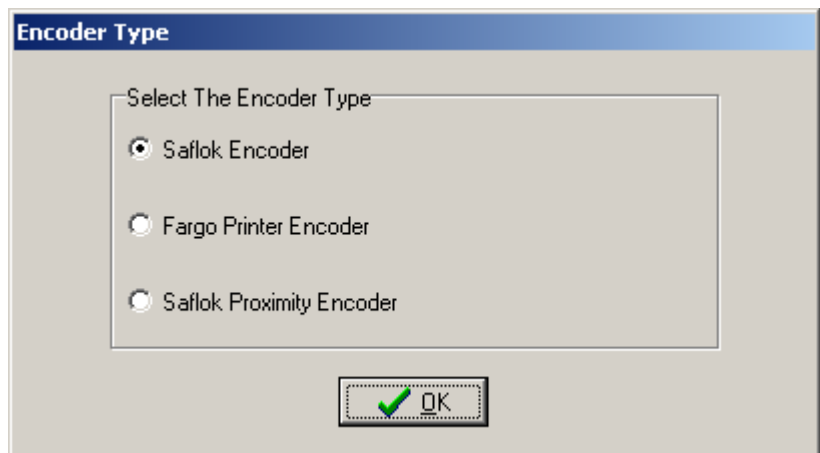
1. Connect the LPI to an available serial port and ensure that it has power.
2. Double click on the CRS icon in the system tray.



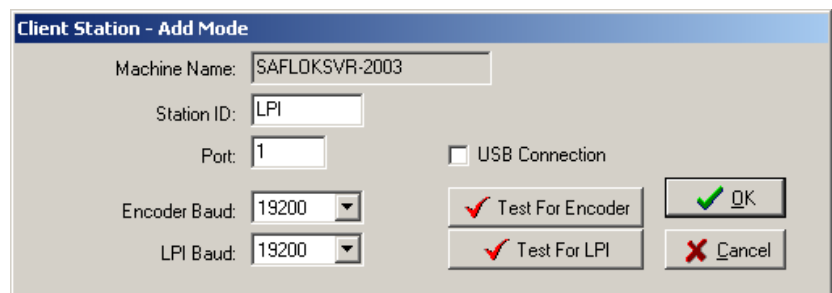
3. Click **File**, and then Log on. Enter your Username and password, and then click the settings tab.
4. Click **Add** under the Station ID assignments for this computer section.



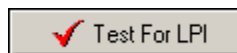
5. Select Saflok Encoder, and click **OK**.



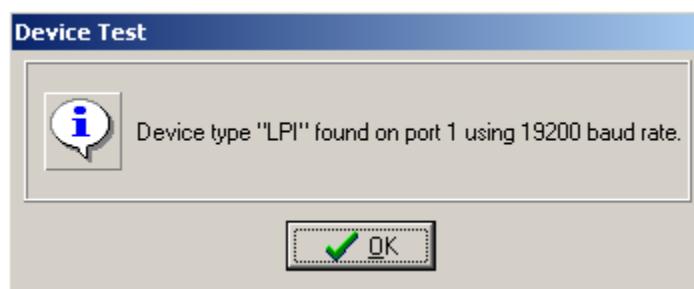
6. Enter a station ID. Typically, LPI is used for LPI stations. If there are multiple LPIs, use a number as well (i.e. LPI1, LPI2, etc). Enter the Port number that the LPI is connected to (i.e. if connected to COM1, enter 1). Set the LPI Baud rate to match the baud rate setting on the device – the default is 19200. The baud rate can be set on the LPI by going to the Setup Menu from the main menu on the LPI (option 3). RS232 Baud rate is option 1.



7. Click the **Test For LPI** Button.



8. If the configuration is correct, you will see a success message. Click **OK** to continue, and then click **OK** again to save the station.



## 2.8 Setting the Default Encoder and LPI Stations

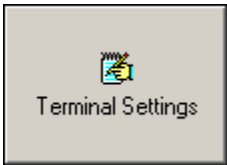
- 1. Double click the Saflok Client icon.
- 2. Log on with your username and password, select **OK**.



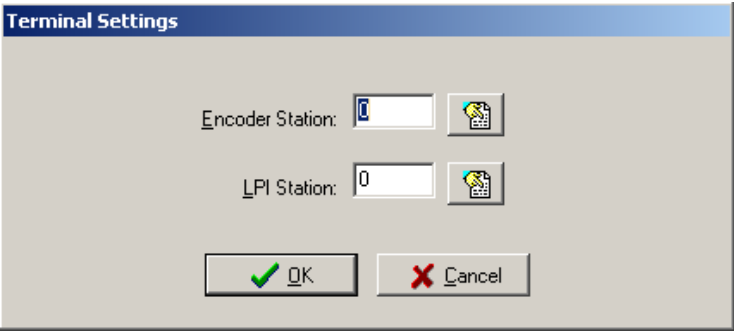
- 3. Click the System tab.



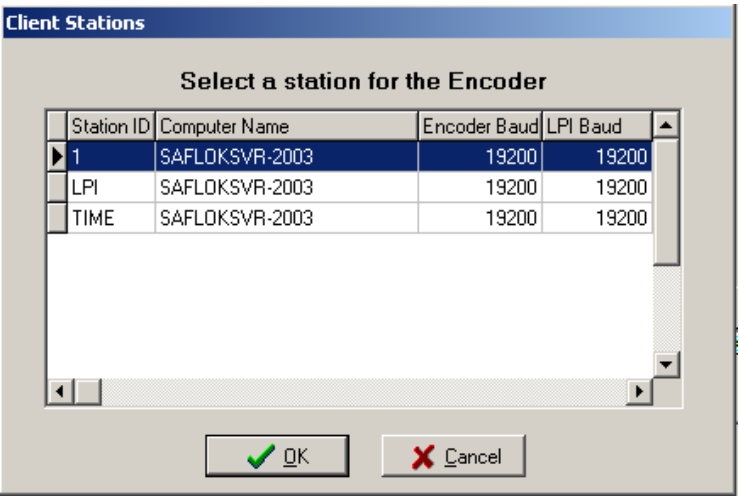
- 4. Click the Terminal Settings button.



- 5. Click the browse icon next to Encoder or LPI Station field.

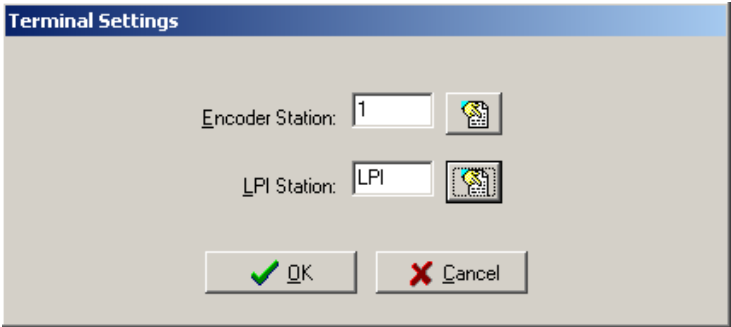


6. Select the station number that you created for the encoder or LPI to be used with this computer. Click **OK** to confirm.



7. Click **OK** to save the default station IDs.

\*The encoder and LPI are now configured and ready to be used on the system.





## SECTION 3

Lock and Keycard Features

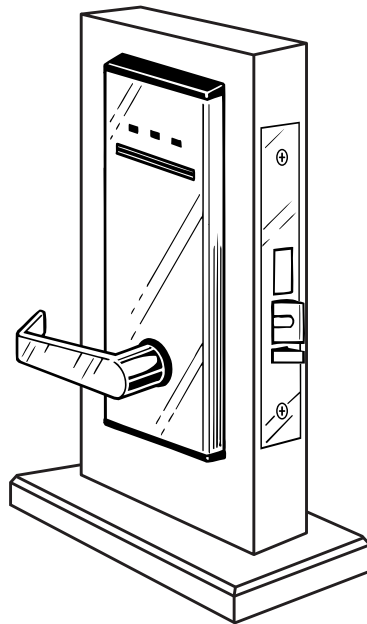
## 3.1 Introduction

SAFLOK locks contain a small battery-powered circuit board that includes a magnetic read head and three indicator lights. These locks use standard credit card size keycards.

When an encoded keycard is inserted into the lock and removed, the read head reads the magnetic code that has been applied to the keycard by the encoder. This code is then analyzed by the circuit board. If the information is correct, voltage is applied to the locking mechanism to release the lock.

A motor controls the locking mechanism on all SAFLOK MT and SL2500 locks. This motor is activated by a signal from the circuit board. The motor will reverse automatically after approximately six seconds.

The locking mechanism on the Select is controlled by a solenoid. The signal from the circuit board activates the solenoid, releasing the locking pin. The handle can then be turned to open the door. When the handle is turned, the solenoid is released and the locking pin is held in the locked position. The solenoid is also released automatically after approximately six seconds.



SAFLOK MT

## 3.2 Keycard Levels

Each lock can be programmed to use multiple keycards, with each keycard operating independently from the others. The lock code for a type of keycard will change only when a new keycard for that same type is created and inserted into the lock, regardless of what changes were made to other keycards.

### **Room/Unit**

Individual keys to each room that are issued upon arrival.

### **Suite**

Typically used for rooms with connecting doors. A Suite keycard will open two or more rooms.

### **Failsafe**

Individual keys for each room. These keys are made in advance and maintained in complete sets to be issued in the event of a system or power failure when no other keys can be made. These keycards are backup keycard for guest rooms. They are usually made in advance and stored in a safe place. They can then be issued to guests in the event of a power or system failure that temporarily prevents the making of new keycards.

### **Limited Use**

These keycards access only one lock and will open that lock only one to six times (as specified in the design configuration by the property).

### **Section**

Opens several rooms in a specified area.

### **Floor**

Opens all of the rooms on a floor.

### **Inhibit**

Opens all of the locks and inhibits the keycard currently working the Room/Unit, Suite, and Fail-safe level keycards assigned to the lock. They will be used after a room is vacated. The inhibit keycard will not open the door and will inhibit the keys even if the dead bolt of the privacy switch is set.

### **Master**

These keycards are used to divide the hotel into master areas to satisfy the needs of the various departments. Keycards used by housekeeping include Building Master keycards, Inhibit keycards, and Grand Master keycards.

### **Grand Master**

Typically operates all rooms on the property.

### **Security/Emergency**

Opens all rooms on the property and will override the dead bolt or privacy switch.

### **Electronic Lockout**

These keycards will double lock a lock from the outside, preventing all keycards, except the Emergency keycard from entering the room.

## 3.2 Keycard Levels (continued)

### Special Lock Levels

#### Secondary Program Keycard (SPK)

This keycard is used to reprogram the current Primary Program keycard (PPK) or remaster a different PPK into a lock. This card should only be made at the direction of SAFLOK service personnel.

#### Primary Program Keycard (PPK)

This keycard is a non-opening keycard that is used in conjunction with Program Information (PI) keycards and Program Status (PS) keycards for programming locks and for performing special functions. It is also used to reprogram the current SPK or remaster a different SPK into a lock.

### Sub Functions within Keycard Groups

#### Unlatch/Latch

Alternately leaves the lock unlatched or latched. When a lock is unlatched, no keys are necessary. This level operates a lock or a group of locks.

#### Pass

The room/unit, section, floor, and Grand Master levels can be programmed as pass levels to allow all the keys from the level to operate the lock.

#### Selectable

A keycard can be assigned to have access to special areas during the encoding process. An example might be giving the keycard access to the parking garage or health club if the property charges for using these facilities. Up to six different selectable pass areas can be assigned in the system.

#### Shift Times

Master-level keycards can be programmed to work only during certain hours of the day. When the keycard is made, the user can select the start and end times of the shift. A keycard can only have one specified shift time. If the keycard is used outside of the shift time, it will not work.

#### Auto Unlatch/Latch

A lock can be programmed to automatically unlatch and latch at specified times each day. Indicate the unlatch/latch times and the day of the week with the lock name (e.g., pool, Sunday through Thursday, unlatch at 9 a.m. and latch at 10 p.m.; Friday and Saturday, 9 a.m. and latch at 12 a.m.).

#### Memory Keycards / RFID Keycards or FOB's

Stores information to track employees. When a memory keycard is used in a lock, it records the room number, date, and time of day. In addition, a memory card can be used to interrogate a lock. Locks must have software version 12.15.03 or greater for interrogation with a memory card.

### 3.3 Keycard Sequence

Each type of keycard can be assigned a sequence range that indicates the number of times a new keycard can be made, but not used in the lock, before the lock will be unable to recognize the next lock code and permit entry into the room. This sequence range can be set from 1-15 skips.

When a new keycard is made it is encoded with the following information:

1. Key Record Number – A number that indicates how the computer has filed the room number.
2. Key Combination – A random code number generated by the computer when the key is made.
3. Identification Number (ID#) – A number from 1-255 that is assigned by the computer to differentiate one master keycard from another.
4. New Key Date/Hour – The date and time that the keycard will begin working on the lock.
5. Expiration Date/Hour – The date and time that the keycard will cease to work in the lock.
6. Sequence Number – The next sequence number assigned by the computer.
7. Property Number – The number assigned to the property.

When a keycard is inserted into the lock and removed:

1. The lock first confirms that the Key Record Number and Property Number stored in its memory matches and numbers on the card.
2. It then checks to ensure that the New Key Date/Time on the keycard is equal to, or later than the key date and time stored in its memory.
3. Finally, it checks the Sequence Number on the card to ensure that it is equal to or greater than the sequence number in its memory, but does not exceed the programmed Sequence Range.

When these three checks are confirmed, the lock updates the information stored in its memory. It then performs the normal checks and releases the locking mechanism.

## 3.4 Making Keycards

### 3.4.1 Making Guest Keycards

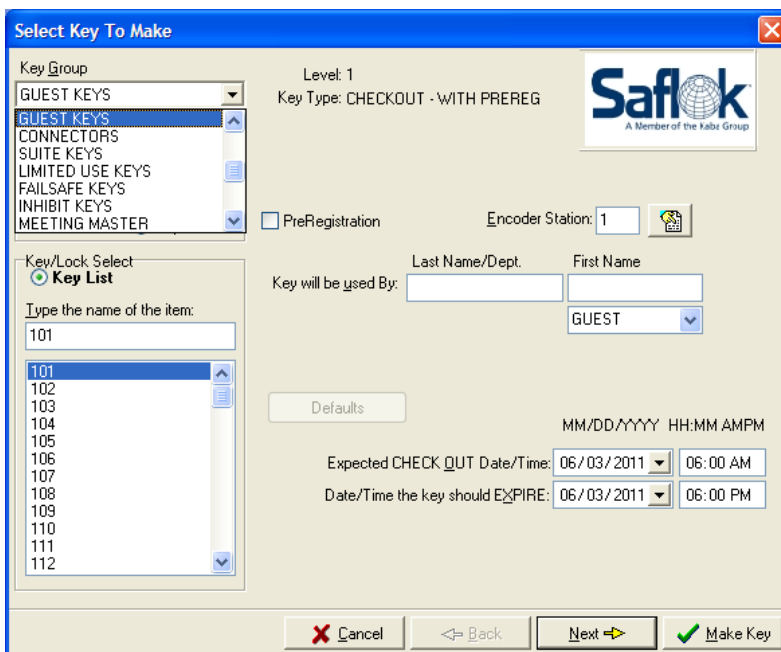
1. Click on the **Keys** tab and the following screen will appear:



2. Click **Make User Keys** to make Guest keys, Master keys, SPK and PPK keys can be made by clicking on the **Make User Keys** function box.

3. Scroll down under Key Group, to the level, or type, of keycard you wish to make, and select it.

4. The **arrow down tab** under Key Function pulls down a list of key functions. Make Standard Key is the option that needs to be selected for processing all level keys.



### 3.4.1 Making Guest Keycards (continued)

5. When making Guest Keys, the option of **New** should be selected if it is for a new guest, or if a guest has lost their key. If a guest needs additional keys during their stay, duplicate should be selected. When making Master Level Keys, **Duplicate** should be selected unless a key for that level under that key number has been lost.

6. To select a room number, click in the **empty box** under: **Type the name of the item** field and type the room number, or scroll down to find the desired room number and click on it.

### 3.4.1 Making Guest Keycards (continued)

7. After selecting a room number, the option of inputting the **name** of the person the key will be issued to can be done by clicking in the desired box. The **Check Out** and **Key Expiration** boxes will also appear. Changing the date and time can be done by clicking in the desired box. Using the arrow down button will bring up a calendar also allowing specific dates to be selected.

Note: A static encoder station number is assigned within Saflok Client.

\*Alternatively, the location of which encoder the key is to be made at can be selected by clicking on the **box** next to the Encoder Station. The following screen allows the user to select at which encoder the key is to be made. Click on the desired **location**, then click **OK**.

8. Next click the **Next** button to advance to the additional information screen if desired.

*Note: At this screen, information such as the name of person being issued the key, key check out, and expiration can be entered if desired.*

\*You can select **Make Key** to proceed without adding the guests name in the information fields.

### 3.4.1 Making Guest Keycards (continued)

9. The Pass Number screen will only appear if pass numbers are assigned in the property key design. Pass numbers allow keycard access to specific areas. Pass access can be selected under **selectable pass numbers**, this allows the person using this key access to the areas selected. Select **yes** to if all of the keys will have the same pass numbers assigned. Any key made during the transaction would include the same pass numbers.

The screenshot shows a software window titled "Additional Information" with a close button (X) in the top right corner. The window contains the following fields and options:

- Key Group:** GUEST KEYS
- Key Name:** 101
- Function:** MAKE STANDARD KEY
- Key will be used By:**
  - Last Name/Dept. (text input)
  - First Name (text input)
  - A dropdown menu currently showing "GUEST".
- Expected CHECK OUT Date/Time:**
  - MM/DD/YYYY HH:MM AMPM format.
  - Date: 06/03/2011 (dropdown)
  - Time: 06:00 AM (dropdown)
- Date/Time the key should EXPIRE:**
  - MM/DD/YYYY HH:MM AMPM format.
  - Date: 06/03/21 (dropdown)
  - Time: 06:00 PM (dropdown)
- ☒ **Opening Key**
- ☐ **Send Key to File** (with a file explorer icon)
- Will all of the keys have the same additional information?**
  - ☒ Yes
  - ☐ No
- Buttons at the bottom:**
  - Cancel (with a red X icon)
  - Back (with a left arrow icon)
  - Next => (with a right arrow icon)
  - Make Key (with a green checkmark icon)

10. Select **Make Key** to encode the guest keycard.

### 3.4.2 Making New Master Keycards

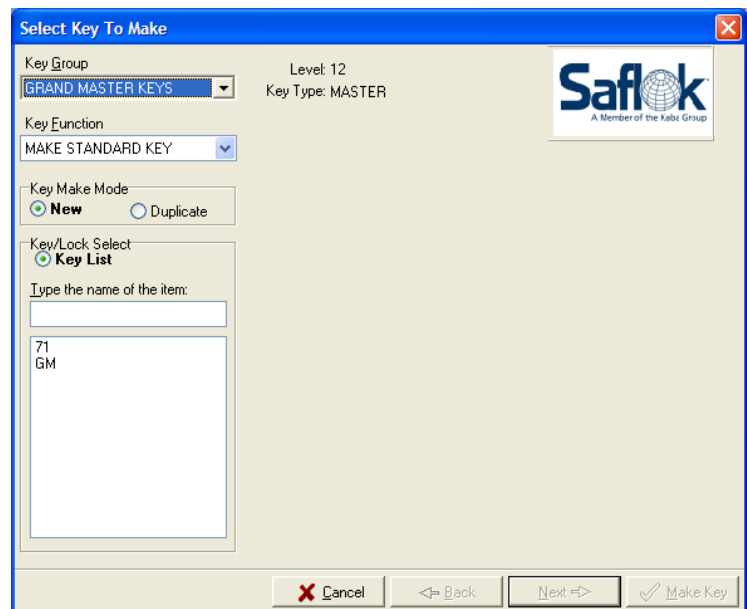
1. Click on the **Keys** tab and the following screen will appear:

2. Click **Make User Keys** to make Guest keys, Master keys, SPK and PPK keys can be made by clicking on the **Make User Keys** function box.



3. Scroll down in the Key Group field and select the key type you wish to make.

4. Select the key name you are making, then select **Next**.



### 3.4.2 Making Master Keycards (continued)

#### Additional Information Screen explanation

Within this screen while creating master keys, you can define days the keys will not function in locks.

You can also configure the key to only function for certain hours of the day (Shift Times).

\*These two features can also be used in combinations for specific hours of the day, while restricting the days the master keys will function.

5. At this screen, the employee name, key expiration, shift times and invalid days can be entered if desired. Input necessary information, then click **Make Key** to continue. At this screen, one or more keys can be encoded.

6. When finished making the desired number of keys, click **cancel**.

### 3.4.3 Making Duplicate Master Keycards

1. When making duplicate master keys, select the **Key Group, Duplicate**, and click on the key number desired. Click on **Next** and the following screen will appear.

2. If you are replacing a damaged key, click **replace key ID#**, then enter the **ID #** of the key to replace. If making additional copies click **additional duplicate keys**.

3. Click **Next** to continue the transaction.

### 3.4.3 Making Duplicate Master Keycards (continued)

4. At this screen, the employee name, key expiration, shift times and invalid days can be entered if desired. Input necessary information. Click **Make Key** to continue.

\*At this screen, one or more keys can be encoded.

5. When finished making the desired number of keys, click **cancel**.

The screenshot shows a software window titled "Additional Information" with a blue header bar and a close button in the top right corner. The window contains the following fields and controls:

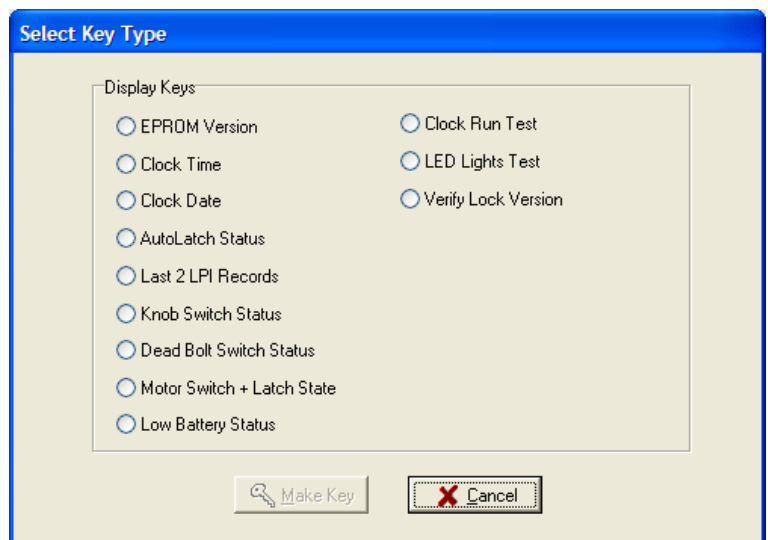
- Key Group:** GRAND MASTER KEYS
- Key Name:** GM
- Function:** MAKE STANDARD KEY
- Days the key will NOT work:** A group of checkboxes for Sun, Mon, Tue, Wed, Thu, Fri, and Sat. All are currently unchecked.
- Key will be used By:** Two text input fields for "Last Name/Dept." and "First Name".
- STAFF:** A dropdown menu currently showing "STAFF".
- Date/Time the key should EXPIRE:** A date field showing "06/02/2012" with a dropdown arrow, followed by the text "At End Of Shift".
- Indicate the Starting and Ending Daily (SHIFT) hours the key should work:** Two time input fields. The "Starting" field shows "11:59 PM" and the "Ending" field shows "11:59 PM". A label "(HH:MM AM/PM)" is positioned between the two fields.
- Opening Key:** A checkbox that is checked.
- Send Key to File:** An unchecked checkbox with an adjacent file explorer icon.
- Will all of the keys have the same additional information?:** Two radio buttons, "Yes" (which is selected) and "No".
- Buttons:** At the bottom are four buttons: "Cancel" (with a red X icon), "Back" (with a left arrow icon), "Next" (with a right arrow icon), and "Make Key" (with a green checkmark icon).

### 3.5 Making Display Keys

1. From the **Keys** tab, select the **Make Display Key** function box.



2. At this screen keys such as Display EPROM Version and LED lights test can be made. These keys display specific information through using the lock indicator lights. To make these keys, click next to the **name of the key**, then click **Make Key**. After making keys click **Cancel**. Refer to Section 4 for detailed explanation regarding display keys.



### 3.6 Making Status Keys

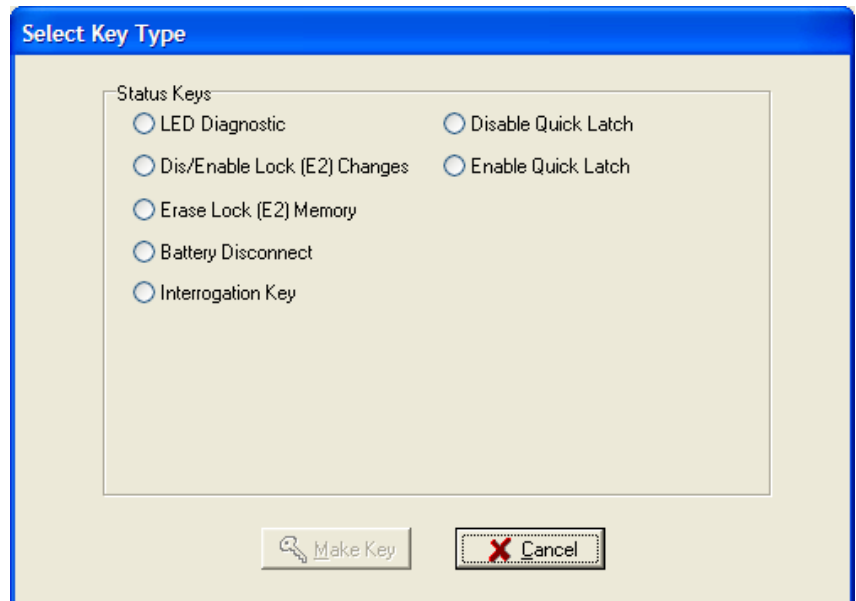
1. From the Keys tab, click on **Make Status Keys** function box. The following screen will appear:



2. To make status keys, click next to the **name of the key**, then click **make key**. Status keys are used in conjunction with the PPK to make changes in the lock's status. The following status keys can be made:

- LED diagnostic key.
- Dis/Enable E2 Changes key.
- E2 Erase key.
- Battery Disconnect key.

\*Refer to Section 4 for further details regarding status keys.



### 3.7 Security/Emergency Keycards

The Security/Emergency keycard is used primarily for security purposes and performs several important operations. Typically, this keycard will open all locks within the property that are assigned to the Security/Emergency area. It will open any lock where the following conditions could exist:

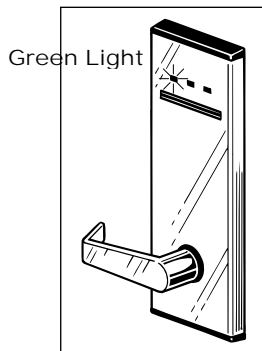
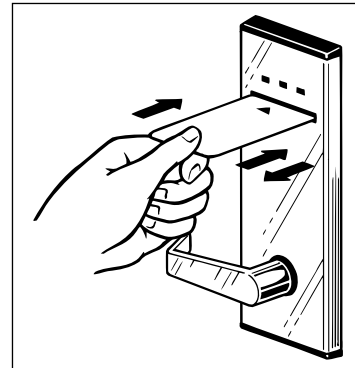
- The privacy button has been activated from inside the room.
- The lock has been dead bolted from inside the room.
- The lock has been electronically locked by a Lockout keycard.

The Security/Emergency keycard is especially useful when there is an emergency, and the lock will not respond to other keycards because the guest has set the dead bolt or pressed the privacy button from inside the room.

To make an Emergency keycard, open the System 6000, click on Make User Keys, then click on Key Groups, and then select Emergency Key. Select on whether the key should be new or duplicate, verify the expiration date, and then click on Make Key.

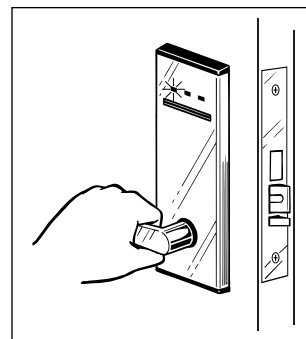
#### Using the Security/Emergency Keycard to enter a room:

1. Insert and remove the Security/Emergency keycard. If using a smart or memory key, wait for the green light before removing.



2. The green light will flash for six seconds.

3. While the green light is flashing, turn the handle and open the door.

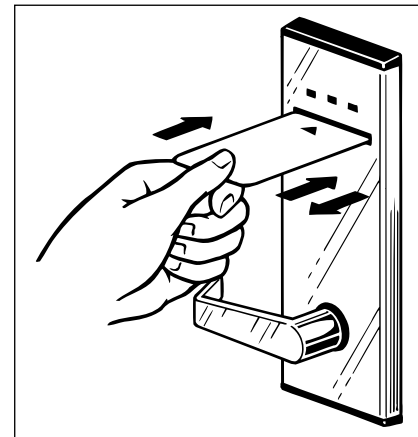


### 3.8 Electronic Lockout Keycards

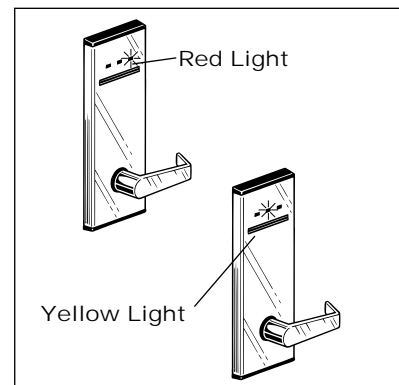
Electronic Lockout keycards are used to electronically lock a room from the outside. When the electronic lockout has been set, only the Security/Emergency keycard will permit access to the room. This keycard is especially useful for locking a room due to such things as theft, maintenance, or other problems that require limited access. To make an Electronic Lockout keycard, open the System 6000, click on Make User Keys, then click on Key Groups, and then select Electronic Lockout Key. Select on whether the key should be new or duplicate, verify the expiration date, and then click on Make Key.

#### Using the Electronic Lockout Keycard to Lock a Room

1. Insert and remove the Electronic Lockout keycard. If using a smart or memory key, Wait for the red light before removing.



2. A red light will flash once. Then the yellow light will flash 12 times. When the light ceases to flash, the lock will be electronically locked and only the Security/Emergency keycard will open the lock.



To remove the electronic lockout, repeat Step 1. When the Electronic Lockout keycard is removed from the lock, a green light will flash once, then the yellow light will flash 12 times. All valid keycards will now open the door.

### **3.9 Controlling Master Keycards**

All Master keycards provide access to a number of rooms, and it is important to ensure that all Master keycards are properly labeled and distributed through a control system that prevents any unauthorized usage.

#### **Keycard ID and Master Numbers**

When you made a Master keycard, the computer will automatically assign a unique identification number to each card. This number appears on the screen before the keycard is inserted into the encoder. Be certain to record this ID number on the keycard before the transaction is completed.

#### **Labeling Master Type Keycards**

After each keycard is encoded, mark the keycard with the type of key, master number, and ID number. You can use a label, permanent marker, or other suitable marking device. If you use a label, make certain that the label is applied to the bottom one-third of the card so that it will not interfere when the card is inserted into the encoder or a lock. If you use a marker, cover the writing with clear tape to prevent erasure. If you punch a hole in the keycard to use on a key ring, put the hole at the bottom of the keycard.

#### **Establishing Control Records**

Establish a control record by recording the key type, master number and ID number for each key on a form. Then, give the block of keys to each of the department heads (housekeeping, security and maintenance), and have them sign for the keycards they receive.

#### **Distributing Keycards to Employees**

Before distributing the keycards to the employees, each department head should establish a sign-in/sign-out sheet for controlling the Master keycards assigned to the department. When the keycards are distributed to the employees at the beginning of the day, the employees should acknowledge receipt by signing the sign-out section of the sheet. When the keys are returned at the end of the day, the employees should sign the sign-in section of the sheet.

#### **Replacing Damaged Keycards**

If you need to replace a damaged Master keycard, you should make a duplicate of the key. This is done by selecting the type of key you want to make from the key group, then be sure to check on Duplicate.

### 3.9 Controlling Master Keycards (continued)

#### Replacing Lost or Stolen Master Keys

If a Master-level keycard is lost or stolen, you have two options; 1) Immediately replace all of the keys for that master area by either making a **new** Standard keycard or 2) Create a Cancel ID key for the specific key ID that was lost. This feature prevents all masters from being remade. This only impacts the lost key ID.

\* Be certain to record the ID numbers and to label each key.

#### Canceling a lost master key with a new master key

Use one of the new keycards in all of the locks in that master area. When you use the keycard in the lock, a flashing green light will appear. If a guest is inside the room and the dead bolt or privacy button has been set, a yellow light will flash 12 times. These lights indicate that the lock code information retained by the lock has been updated to the new lock code and that the lost or stolen keycard will no longer work in the lock. This procedure is called “re-sequencing the lock.” If the proper lights do not appear, use LED diagnostics to determine why the keycard did not work.

The department head should then collect all outstanding keycards for that master area and issue the new keycards as described earlier.

#### Using Cancel ID to inhibit specific lost master key ID

Create a cancel ID key for the key ID number that is lost. Use the Cancel ID key on every lock in the property associated with the lost master. The remaining keys in that master group will remain functioning. The lost master will no longer work once every lock has received the cancel ID command.

#### Master Keycard Expiration

When a Master keycard is used within seven days of its expiration date, the keycard will produce a one second yellow light, followed by flashing green lights. These lights indicate that the keycard will expire soon and should be replaced or re-encoded with a new expiration date.

If the keycard is allowed to expire without being replaced or re-encoded with a new expiration date, the keycard will no longer open the door, and eight yellow flashes will appear when the keycard is used in the lock.

### 3.10 Failsafe Keycards

You wouldn't drive your car without insurance. Too many things could happen. Similarly, you shouldn't operate the SAFLOK® System 6000™ without the insurance of stored Failsafe keycards.

If your property is without power – or if your computer system fails, Failsafe keycards are your insurance against lost revenue and dissatisfied guests.

The preparation and storage of Failsafe keycards should be done when the System 6000 is first set up. If your property is operating without Failsafe keycards, it is critical that you correct this situation immediately.

Failsafe keycards are backup keycards for guest rooms. These keycards are made in advance and stored in a safe location. In the event of a power outage or a system failure that temporarily prevents the making of new keycards, the Failsafe keycards can be issued to guests who are checking in.

Three sets or “sequences” of keycards should be created and stored. This will allow your property to rent a room three times during a power outage or system failure. Each of these sets should contain two keycards, so each guest can have two keys for his or her room.

Even though Failsafe keycard preparation does take time, this time and effort will greatly pay for itself in an emergency. Here's how to prepare your three sets of Failsafe keycards:

- First, get a three-ring binder for each set of Failsafe keycards. Use plastic holder pages that are designed to hold business cards or baseball cards. These plastic pages are ideal for holding the Failsafe keycards. (As an alternative, you can use three bins or boxes with separate envelopes for each room's keycards.)
- Label the three-ring binders as “Failsafe Sequence #1,” “Failsafe Sequence #2,” and “Failsafe Sequence #3.”
- Then label each pocket in the holder pages (or each envelope) with “RM101,” “RM102,” and so on.

**Note:** Because Failsafe keycards could potentially be used at any time to access a room, the Failsafe binders should be stored in a very secure location.

If you have questions about Failsafe keycards, contact SAFLOK at 800.999.6213.

### 3.10 Failsafe Keycards (continued)

#### Making Failsafe Keycards

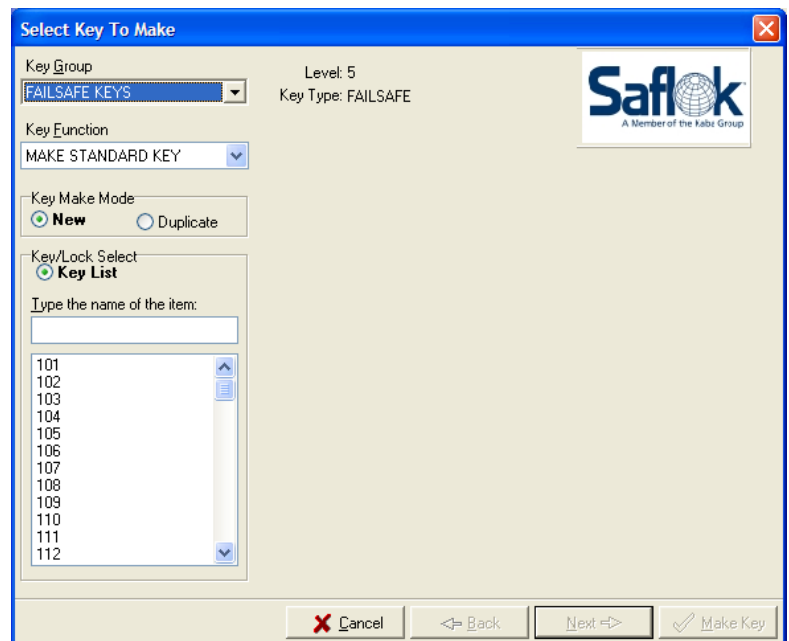
With the binders or storage bins labeled and ready (see the previous section), you now are ready to make the Failsafe keycards.

**Note:** The user making the Failsafe keycards will need to have the appropriate authorization. If this user does not currently have this authorization, edit their user information and add the “Failsafe Keys” authorization group.

1. Click on the **Keys** tab. Then click on the **Make User Keys** function box.



2. Click the **down arrow** under Key Group and select **Failsafe Keys**.



### 3.10 Failsafe Keycards (continued)

3. Under Key Function, select **Make Standard Key**.
4. Make sure **New** is selected under Key Make Mode.
5. Enter the first **room number** then click **Make Key**.

**Select Key To Make**

Key Group: FAILSAFE KEYS Level: 5 Key Type: FAILSAFE

Key Function: MAKE STANDARD KEY

Key Make Mode: ☒ New ☐ Duplicate

Encoder Station: 1

Key/Lock Select: ☒ Key List

Type the name of the item: 101

101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112

Cancel Back Next Make Key

6. The insert key screen shown above will appear. Insert the first key. At the prompt insert the second key. At the next prompt, (to make a third key) click **Cancel**.

**Additional Information**

Key Group: FAILSAFE KEYS Key Name: 101

Function: MAKE STANDARD KEY

Key will be used By: Last Name/Dept. First Name

SAFLOK

**Make A Key**

Key ID: 3

USING A BLANK OR USED KEYCARD  
INSERT KEYCARD INTO ENCODER

Opening Key ☒

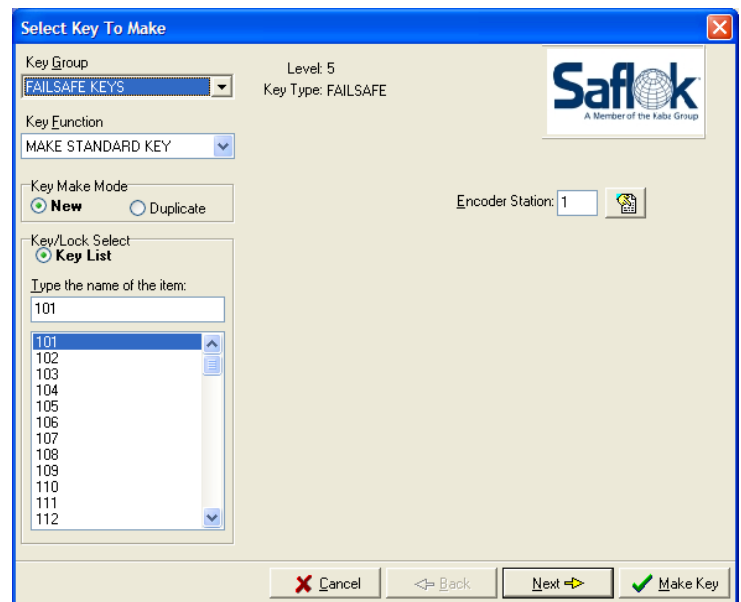
Send Key to File ☐

Will all of the keys have the same additional information? ☐ Yes ☒ No

Finished Cancel Back Next Make Key

### 3.10 Failsafe Keycards (continued)

7. The screen will return to the Select Key to Make screen. The Key Group, Key Function and Key Make Mode will still be ready for making Failsafe Keys. Select the next **room number** and click **Make Key** and follow the instructions in step 4.
8. Continue to make all of the room keycards (two for each room) for Sequence #1. To start Sequence #2, simply start with the first room number again and repeat the process. Then make the keycards for Sequence #3.



**Note:** Sequence #1, #2, and #3 Failsafe keycards for Room 101, as an example, could all be made at one time (followed by the three sets for Room 102, and so on). However, if you do this, there are several important things to keep in mind. First, have all three binders open and prepared to receive the sets. After you make the Sequence #1 Failsafe keycards for Room 101 (two keycards), you must click on “Cancel.” (In other words, it is critical that you DO NOT simply made six of the same keycards.) By clicking on “Cancel,” you will then be making completely new keycards for Room 101 for Sequence #2. Be sure to place the Sequence #1 keycards in the Sequence #1 binder and to not mix up the order.

**Note:** Every time you make a new Failsafe keycard set for a room, you are making a new sequence of keycards. These will correspond to Sequence #1, Sequence #2, and Sequence #3, which is the order that you make these keycards. However, the software does not indicate which sequence is being generated. The person making the keycards must keep track of the sequences by filing the keycards in the proper binder.

### 3.10 Failsafe Keycards (continued)

#### Issuing and Updating Failsafe Keycards

In the event of a power or system failure, Failsafe keycards should be issued to new guests. The Sequence #1 Failsafe keycards should be issued first for a room. If there are no keycards in the Sequence #1 binder for that room, issue the keycards from the Sequence #2 binder. If there are also no keycards in the Sequence #2 binder, issue keycards from the Sequence #3 binder.

Failsafe keycards will expire based on the time and date that the keycard is *first* used in the lock. (The length of time a Failsafe keycard will work was set by your property in the software design.)

Any room that has had Failsafe keycards issued needs to be updated so that three complete sequences are stored.

If a room's Sequence #1 Failsafe keycards are issued, move the Sequence #2 keycards into the Sequence #1 binder. Then move the Sequence #3 keycards to the Sequence #2 binder. Next, make a new set of keycards for the room and store them as Sequence #3.

If a room had Sequence #1 and Sequence #2 keycards issued, move the Sequence #3 keycards to the Sequence #1 binder and make two new sets, storing them as Sequence #2 and #3 (making sure that these are kept in the order they were made).

If a room had all three sequences issued, make three new sets (making sure that these are kept in the order they were made).

Make the new replacement sets of Failsafe keycards as soon as the power or system failure is resolved.

***If you remain diligent with your Failsafe keycards, power or system failures won't stop things from running smoothly for guests.***



# Section 4

## Lock Operation

## **4.1 Introduction**

This section of the manual is intended for people who program and troubleshoot locks. It covers the use of special keycards, programming and interrogating locks, controlling Master level keycards, and lock and keycard maintenance. Before reviewing this section, you should first become thoroughly familiar with the material covered in Sections 1 and 2.

## 4.2 SAFLOK Lock Features

### Automatic Inhibiting

Normally, a guest room lock will be set up to operate with more than one guest keycard type (Guest, Alternate Guest, Failsafe). The lock can be programmed to automatically activate inhibiting between these keycard types. When a new keycard is used from one of the types, it will prevent previously used keycards for the other keycard types from activating the lock.

### Inhibit Keycard

The Inhibit keycard is used to prevent the current Guest, Alternate Guest or Failsafe keycards from entering a room. When this keycard is used in the lock and removed, the current keys of these types will not activate the locking mechanism. This feature prevents guests who have checked out of a room from later reentering the room, and is normally used by housekeeping after the room has been cleaned.

### Block/Unblock Keycards

These keys can be used to temporarily prevent a specific key ID from accessing a lock or multiple locks. A specific key ID can be blocked allowing remaining key ID's in the same key group to remain functioning. The block and unblock key can be assigned to both guest and master level key groups.

### Automatic Unlatch/Latch

A lock can be programmed to automatically unlatch or latch at specified times for each day of the week. A keycard is not required to perform the unlatching and latching activities. When a lock is unlatched, a key is not required to open the door. The lock may have up to 16 different unlatch/latch times per week. This feature is not available with the SAFLOK Select lock.

### Unlatch/Latch Keycards

A lock can be programmed to allow a keycard to latch and/or unlatch the lock. When a lock is unlatched, a keycard is not required to open the door. If a keycard is used, the lock will display the normal lights and will function normally. When the lock is once again latched, a valid keycard is required to release the locking mechanism. This feature is not available with the SAFLOK Select lock.

### Dead Bolt/Privacy Feature – Guest Level Keycards

Each level of the lock can be programmed to indicate whether or not a new key will cancel out the previous guest keys if it is used when the dead bolt/privacy feature is activated.

If a new keycard is made for the room, and the current guest has set the dead bolt, the new key will not open the door or update the lock code stored in the lock. This keeps the current guest key from being canceled if a new guest is mistakenly checked into the room.

### Dead Bolt/Privacy Override – Master Keycards

Each type of master keycard can be programmed to indicate whether or not it will override the dead bolt/privacy function. Usually, one master keycard type (Emergency) is programmed with the capability, and is used only in emergency situations.

### Dual Keycard Entry

A lock can be programmed to require two keycards to be used together in order to activate the lock. The keycards are encoded "control" and "non-control" keycards, and if only one keycard is used, it will not activate the lock. At least one of the keycards must be a "control" key, and the keys can be used in any order. Dual entry keycards are normally used to control access to high security areas.

## **SAFLOK Lock Features (continued)**

### **Multiple Keycards**

The lock can be programmed to have multiple keycards of the same type functioning at the same time. This feature allows different departments to be assigned separate keycards while not requiring the use of additional master levels. It also allows the lock to handle variable connecting room assignments for guest keycards.

### **Electronic Lockout**

A lock can be programmed to allow a keycard to set an electronic lockout, remove an electronic lockout or toggle between setting and removing an electronic lockout for any keycard type.

When the electronic lockout is set, the lock will be electronically locked from the outside, and valid keycards will be unable to activate the lock. Every type of keycard must be programmed to indicate whether or not it will be affected by the Electronic Lockout keycard. Two separate electronic lockout levels are available, and there can be one keycard to lock out only Guest-level keycards and another to lock out Master and Guest keycards.

### **Internal Clock and Calendar**

The SAFLOK lock contains a clock crystal that maintains actual date and time. The time is updated every minute and the crystal automatically adjusts for changes due to Daylight Saving Time and Leap Year.

### **Invalid Days**

Both the lock and keycards can be programmed to only work on certain days of the week, as specified by the user. If a keycard is used on an invalid day, the lock will not open.

### **Shift Keycards**

Keycards can be programmed to work only during certain shift hours of the day. When the keycard is made, the user can specify the start and end times of the shift. A keycard can have only one shift specified. If the keycard is used outside the shift times, it will not work.

### **Keycard Expiration**

Keycards can be programmed to expire after a certain date and time. The expiration date and time is encoded on the keycard when it is made. A standard expiration is automatically assigned by the computer, but this can be changed when the keycard is made.

Failsafe keycards, which are made in advance, will expire based upon the time and date the keycard is first used in the lock. The length of time a Failsafe keycard will work is encoded on the keycard when it is first made.

### **Limited Use**

One keycard type can be programmed to limit the number of times (one to six) a valid keycard will activate the lock. This determination is made in advance, and the number of times the keycard will work cannot be varied each time a limited use keycard is made. You can also program a keycard expiration date and time when a keycard is made. The keycard will cease to activate the lock when it has been used the specified number of times or when it expires at the specified date and time, whichever comes first.

## SAFLOK Lock Features (continued)

### Pass Feature

This feature is used for special locks such as pool doors, elevators or limited access doors. Certain types of keycards can be programmed as “pass,” allowing all keycards for that type to activate the locking mechanism. The “pass” feature can be programmed in several ways:

Pass on Property Number – These locks will allow any keycard made at the property to function in the locks.

Pass Numbers – Special locks (lounge, elevator, etc.) can be assigned a “pass” number. Keycards with the same “pass” numbers would have access to the locks. The pass number feature can be automatically encoded, or selected by the user when the keycard is made.

Locks with the “pass” feature can also be programmed to allow the pass keycards to function only during certain hours of the day.

### Invalid Keycard Shutdown

If ten invalid keycards are used in a lock in a row, the lock will automatically shutdown for one to two minutes. No indicator lights will be displayed during this period. After one to two minutes, if another invalid keycard is used, it will cause the lock to once again shutdown. The use of a valid keycard will terminate the shutdown mode.

### LED Diagnostics

If a keycard does not work in a lock, LED diagnostics can be activated by the use of the PPK and LED Diagnostics keycards. After activating the LED diagnostics, the keycard that did not work will cause the light indicators to display an error code that indicates the reason the keycard did not work. If the inserted keycard is a valid keycard, the indicator lights will display the normal lights and the keycard will work normally. LED diagnostics can be terminated by inserting the LED Diagnostics keycard, or will terminate automatically after two minutes.

### Low Battery and Clock Reset

If the lock’s batteries are low, or if the clock needs to be reset, a red indicator light will flash when a correct keycard is used. If the battery is low, the red light will flash alternately with the normal lights when the keycard is used. If the clock needs to be reset, the red light will flash simultaneously with the normal indicator lights when the keycard is used.

Each keycard is also programmed to indicate whether or not it will be affected by the low battery or clock reset condition.

**Hassled** – The first time the keycard is used, the lock will display only the red indicator light and will not allow entry into the room. When the keycard is used again, it will display the normal indicator lights, along with the red indicator light, and the latching mechanism will be released.

**Locked Out** – The first and each subsequent time the keycard is used, the red indicator light will flash, but entry to the room is denied, regardless of the number of times the keycard is used in the lock.

**Not Hassled and Not Locked Out** – When the keycard is used, it will display the normal indicator lights, along with the red indicator light, and the latching mechanism will be released.

When the clock is reset, or the battery changed, the keycards will operate normally.

## **SAFLOK Lock Features (continued)**

### **Skipping Keycards – Sequence Range**

Every keycard is assigned a sequence range that reflects the number of new keycards that can be made and not used before the lock is unable to recognize the next new keycard made. The range can be set from 1-15 skips.

### **Software Diagnostics for Hardware Failures**

The lock software is designed to identify certain hardware failures that can occur within the lock. If one of these failures should occur, refer to the troubleshooting section of the Lock Installation Manual for special keycard procedures to open the door.

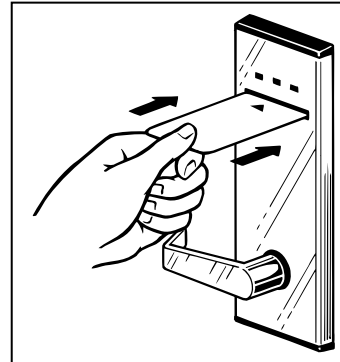
These hardware problems include:

- The key switch is stuck or broken. When this failure occurs, the software will allow the lock to read the keycard and activate the locking mechanism.
- The motor is jammed or a motor switch has failed. For security reasons, when this failure occurs, the software will prevent any keycard from activating the locking mechanism.
- There is a problem in the E2 storage chip. When this failure occurs, a keycard cannot be validated. The software will prevent any keycard from operating normally.

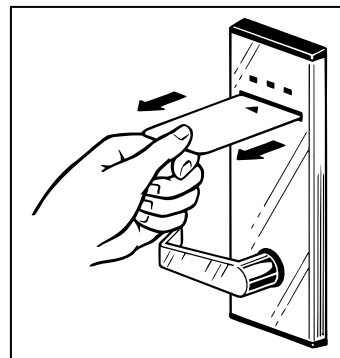
### 4.3 Using a Standard Magstripe Keycard

The card must be properly inserted into the lock so that the information on the card can be read by the read head contained within the lock.

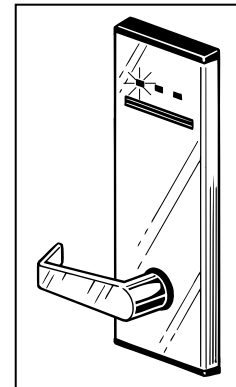
1. Insert the keycard fully into the lock with the arrow side facing up. Make certain that the arrows printed on the face of the card are pointing towards the lock.



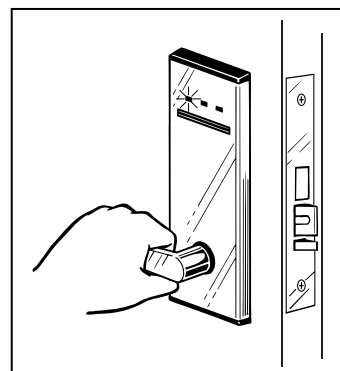
2. Remove the card as soon as it has been fully inserted into the lock. If using a smart or memory card, wait for the green light before removing the keycard. The lock will not operate until the keycard has been removed.



3. A flashing green light will appear on the front of the lock as soon as the card is removed. The light will flash for six seconds.

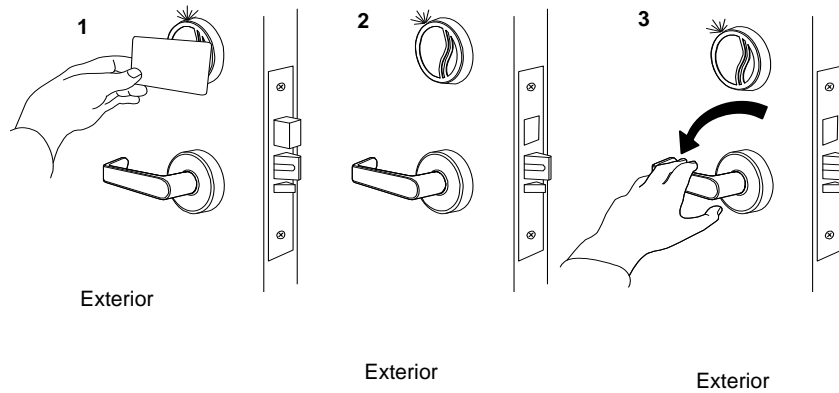


4. While the green light is flashing, turn the handle to open the door. If the handle is not turned while the green light is flashing, the latching mechanism will be returned to the locked position.



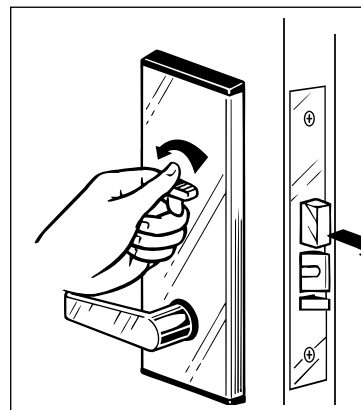
#### 4.4 Using an RFID Keycard

1. Bring the flat surface of your keycard near the circular or rectangular RFID reader. When the keycard is close enough to be read, the yellow light will flash on the RFID reader. You will hear the lock operate.
2. The green light will begin to flash once access has been granted.
3. Turn the lever and open the door while the green light is flashing.

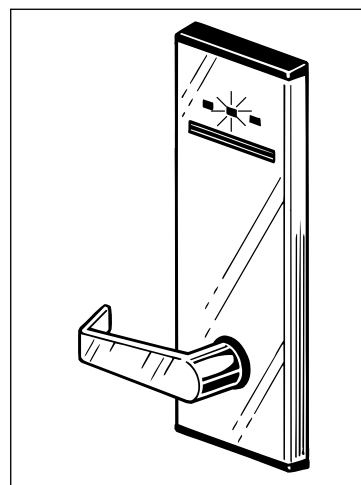


#### 4.5 Dead Bolt and Panic Feature, SAFLOK MT and Premier

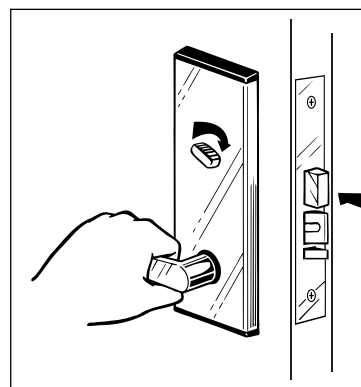
In addition to the normal latching features, each SAFLOK lock is equipped with a dead bolt that can be activated from the inside of the room. The dead bolt is set by turning the dead bolt latch to the locked position.



When the dead bolt is in the locked position, a flashing yellow light (12 times) will appear when a keycard is inserted into the lock and removed, and the door will remain locked. A Master keycard that has been programmed for dead bolt override will produce a green flashing light (12 times) and will override the dead bolt and allow access to the room.



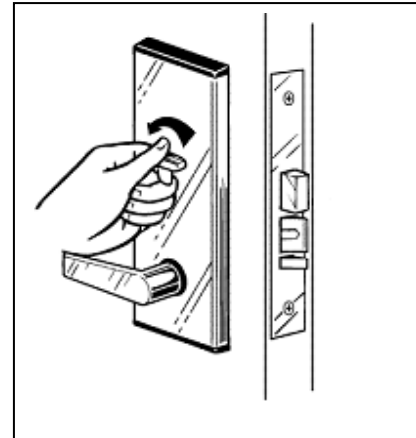
To unlock a dead bolted door from inside the room, turn the door handle. This action will retract both the latch and the dead bolt, and is known as the "Panic Feature." With this capability, there is no need to first turn the dead bolt latch to the unlocked position before opening the door.



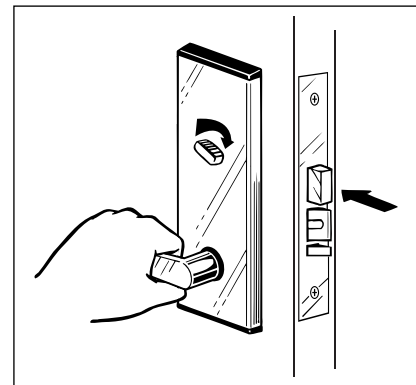
## 4.6 Automatic Dead Bolt Feature, SAFLOK ADB

The SAFLOK ADB and Select models have an automatic dead bolt feature that automatically projects a 1" dead bolt when the door is closed. This feature provides additional latching security against forced entry. However, when the door is closed and the automatic dead bolt is in the latched position, all valid keycards will continue to have access to the room.

For additional security, each lock is equipped with a privacy thumbturn. When activated from inside the room, only those keycards for levels programmed to override the dead bolt will have access to the room. For all other valid keycards, a flashing yellow light (12 times) will appear when the keycard is inserted into the lock and removed, and the door will remain locked.



To open the door from the inside of the room after the privacy button or switch had been set, simply depress the door handle. This action will override the privacy button or switch and will enable the occupant to exit the room.

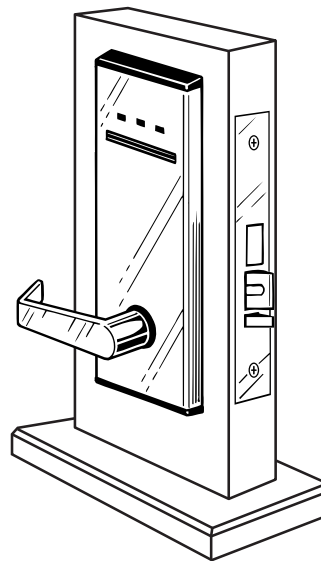


## 4.7 Demonstration Locks

SAFLOK demonstration locks can be used at the front desk to demonstrate the operation of the lock and keycard to guests, or for training in-house personnel.

To demonstrate the keycard and lock to a guest:

1. Insert the keycard fully into the lock, making certain that the arrow printed on the card is face up and pointing into the lock.
2. When the keycard is fully inserted into the lock, remove it immediately. The green light will begin to flash. Explain to the guest that the keycard must be removed from the lock before the green light will begin to flash.
3. While the light is flashing, depress the handle to demonstrate how the latch will release, allowing access to the room. Explain to the guest that the green light will flash for approximately six seconds, and that the handle must be turned while the light is flashing in order to release the locking mechanism.
4. Show the guest how to set the dead bolt or privacy thumb turn piece from inside the room.
5. Insert the keycard fully into the lock and remove it immediately. The flashing yellow light will appear (12 times), and the handle cannot be turned from outside the room. Explain that only the Security/Emergency keycard will override the dead bolt or privacy thumb turn piece in event of an emergency.
6. Show the guest how to unlock the dead bolt or privacy thumb turn piece by depressing the handle from inside the room. Explain that this feature is for guest safety, and that even if the electronic lock should fail, the room can be opened from the inside by depressing the handle.
7. Have the guest perform the operations explained in Steps 1-6. Explain that if the normal lights do not appear when the keycard is used in the lock, check to ensure that the keycard has been properly inserted, and then repeat Steps 1-3. Instruct the guest to contact the front desk if they encounter any difficulty in unlocking the door.



**MT Lock**

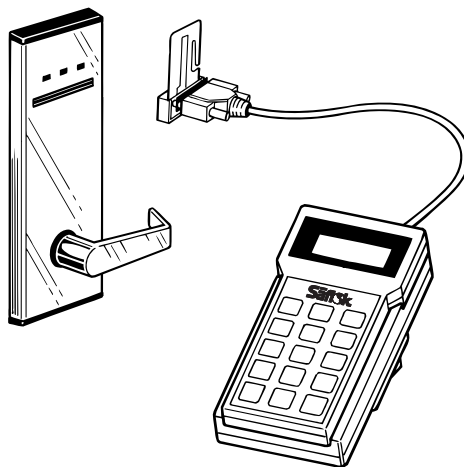
## 4.8 Programming Locks

When the locks are shipped from the factory, the batteries are installed. The locks will be fully functioning when installed on a door. However, the locks will not accept the keycards generated by the computer until the lock codes from the computer are programmed into the lock. To program the locks to accept the keycards, you must use the Lock Programmer and Interrogator (LPI) Interface Probe, along with the main or backup computer, standard terminal, or LPI terminal.

### Lock Programmer and Interrogator (LPI) Interface Probe

The LPI probe acts as an interface between the lock and the LPI device and is used to enter lock code information directly from the computer into the lock. It is also used to interrogate locks to obtain a history of keycards that were used in the lock, lock status information, and keycard diagnostic information.

The LPI probe has an interface board and cable with a 25-pin connector. The probe cable is connected to the printer port at the top of the portable Hand Held (LPI) device. The interface probe is inserted directly into the lock.



### Programming Locks Using the LPI Probe

To program locks using the LPI probe, you must attach the probe to the LPI device and follow the instructions that appear on the screen.

The system will transfer the lock code information from the main computer to the device. After the information is transferred to the device, you can then disconnect the LPI device from its cables and transport it and LPI probe to the lock. Insert the probe directly into the lock and you will be able to transfer the lock code information from the LPI device to the lock.

When you disconnect the LPI device to transport it to the lock, it will automatically shift to battery power. The NICAAD batteries are located inside the LPI device and should enable you to keep the LPI device offline for one to three hours before recharging is necessary. When batteries become low, a low battery indicator light on the LPI device will begin to flash and the LPI device will emit a beeping sound. You should then reconnect the terminal to its power source.

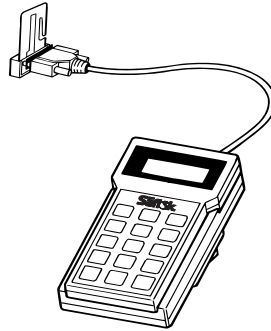
When the LPI device is reconnected, the batteries will recharge automatically. The batteries will fully recharge in four to six hours.

## Programming Locks (continued)

### Programming Quantum Locks Using the LPI and LPI-R Probes

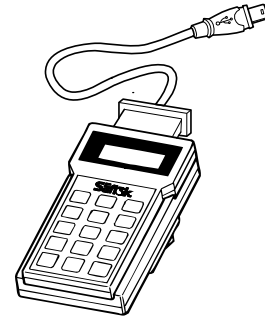
Follow the steps for lock programming in the system's operations manual.

- For Quantum MT locks, insert the probe directly into the lock to transfer the lock code information from the LPI Device to the lock.



**LPI Probe for  
Quantum MT  
Card Readers**

- For Quantum RFID locks, remove the rubber cover from the port on the bottom of the RFID reader. Plug in the LPI-R device cable to transfer the lock code information from the LPI Device to the



**LPI-RFID Probe  
for Quantum  
RFID Readers**

## 4.9 Setting Date and Time

The SAFLOK lock contains a clock crystal that maintains actual date and time. The time is automatically updated every minute and the clock is automatically adjusted for changes due to Daylight Saving Time (if applicable), and Leap Year. The date and time are also automatically reset whenever the Lock Programmer and Interrogator Probe are used to program or interrogate a lock. However, the lock's clock will need to be reset if any of the following conditions occur:

- The lock's batteries are disconnected without using the Emergency Lock Power Supply (ELPS).
- Daylight Saving Time changes require a manual reset.
- The lock experiences a fatal low battery condition.
- The clock had not been reset via programming or interrogating within a 12-month period.

If the lock's clock needs to be reset, a red indicator light will appear when a keycard is used. The following conditions can apply:

- **Hassled** – The first time the keycard is used, the lock will display the red indicator light, but will not allow entry into the room. When the keycard is used again, the red indicator light will flash simultaneously with the normal light, and the latching mechanism will be released.
- **Locked Out** – the first and each subsequent time that the keycard is used in the lock, the red indicator light will flash and entry to the room is denied regardless of the number of times the keycard is used in the lock.
- **Not Hassled and Not Locked Out** – When the correct keycard is used in the lock, the red indicator light will flash simultaneously with the normal light, and the latching mechanism will be released.

### Resetting Date and Time Using the LPI Probe

To reset the date and time, use the LPI probe and device and select menu option #3 on the LPI device. Follow the instructions that appear on the screen. (Refer to Section 5 for step-by-step instructions).

## 4.10 Lock and Keycard Maintenance

### Lock Batteries

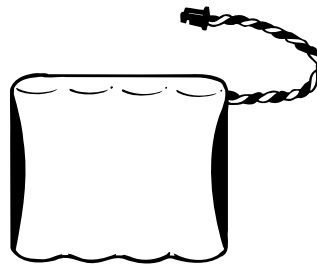
Each lock contains a battery pack, which is used to power the lock's circuit board and to release the locking mechanism. Two types of battery packs are available: alkaline batteries and lithium batteries. The alkaline battery pack contains four batteries. The long life lithium battery pack contains two batteries.

The lock's batteries may need to be replaced when one of the following symptoms appear:

- A Display keycard produces no lights.
- A Standard keycard alternately flashes the red light with the green or yellow lights, or flashes only the red light.
- The LPI report indicates that the batteries are low.

If you wish to test a lock for low battery condition, use a Display Low Battery Status keycard. This keycard will verify whether or not the batteries are low and need changing without affecting any keycards that work in the lock. If the key produces no lights, follow the Troubleshooting Procedures in the Lock Installation Manual.

Step-by-step procedures for replacing lock batteries on each type of lock are provided in the Troubleshooting Section of the Lock Installation Manual.



SAFLOK  
MT & RFID  
Alkaline

### Emergency Lock Power Supply (ELPS)

The Emergency Lock Power Supply is used to provide temporary power to lock while changing batteries. If the lock's batteries have died, the ELPS provides sufficient power to enable a keycard to open the door. Before using the ELPS, you should always check the ELPS batteries and interface contact pads or interface pins.

For step-by-step procedures on using the ELPS, refer to the Lock Installation Manual.

## Lock and Keycard Maintenance (continued)

### Removing Foreign Material From Locks/Releasing Stuck Circuit Board Switch

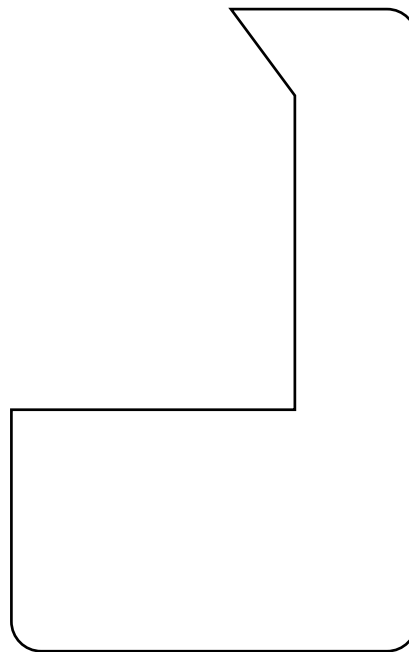
If foreign material should become stuck in the read head of a lock, the lock will produce one red flash every minute. This red flash will also appear if the lock's keycard insertion switch is engaged.

To remove foreign material from a lock, make a removal tool from a blank keycard. Use a pair of scissors and follow the pattern that appears below. It is important to remove any foreign material as quickly as possible to proven draining the lock's battery. The lock's battery should then be checked by using the Low Battery Status Display keycard.

Insert the cut plastic card directly into the keycard slot and attempt to remove the material. After the foreign material is removed, the red flash should no longer appear, and a valid keycard should open the door.

If no foreign material is detected, check for an engaged circuit board switch. To release the circuit board switch, insert the card into the lock with the notch on the left side, and attempt to pull the switch forward. If you are unsuccessful in correcting the problem, it may be necessary to remove the lock from the door to replace the circuit board.

If either condition occurs, check the lock's battery by using the Low Battery Status Display keycard.



### Cleaning Keycard Encoder and Lock Read Heads

The keycard encoder magnetically encodes information onto the keycard when instructed to do so by the computer. These keycards must then be read by the read head within the lock in order for the lock to properly respond. For the encoder and read head to function correctly, both should be cleaned on a regular basis.

The encoder should be cleaned at least once each week. Use a special felt cleaning keycard. First, sign on to the computer, following the procedures for making a keycard. Next, apply a small amount of encoder cleaning fluid to both sides the cleaning keycard and insert the keycard into the encoder three times. Each time you insert the card, it will be rejected.

Each lock read head should be cleaned twice yearly. To clean, apply a small amount of cleaning fluid to both sides of the special felt cleaning keycard. Insert the keycard fully into the keycard slot and remove. Repeat this process three to five times.



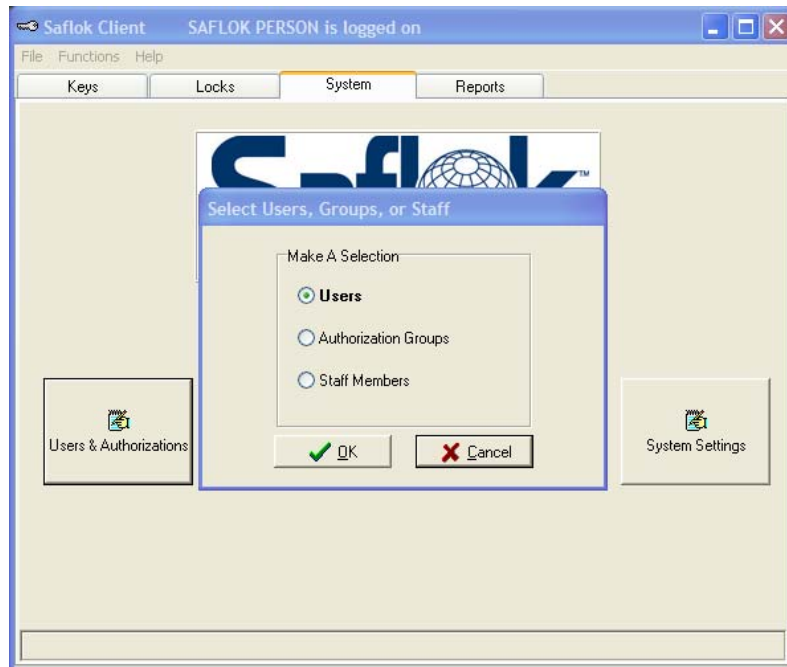
# Section 5

System 6000 Transactions

## A) Users & Authorizations

### Inputting Users

1. From the System tab, click on the Users & Authorizations function box.
2. Select **Users** to add new users and edit or delete existing users on the system.
3. Select **Authorization Groups** to design authorization groups.
4. Click **OK** after making selection.

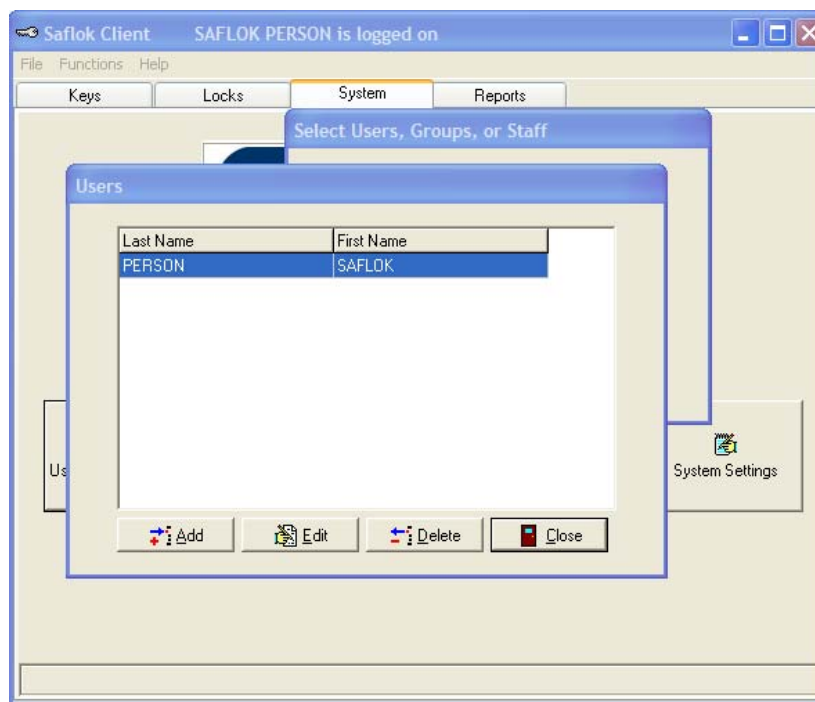


## System 6000 Transactions (continued)

If an individual is to be added, click on **Add**.

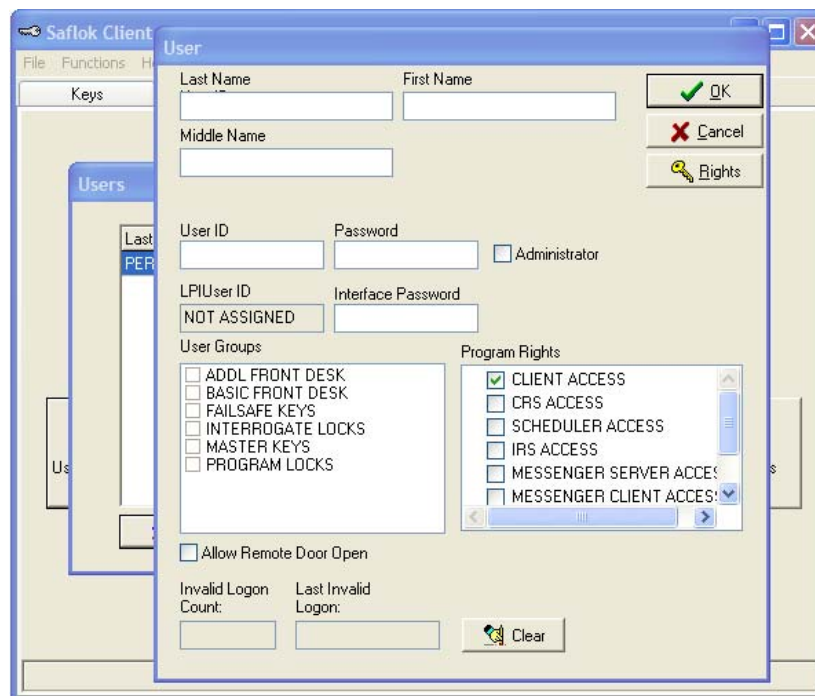
If an individual's ID, Password, or Authorizations is to be changed, locate the individual, click on their **name**, and click on **Edit**.

If an individual no longer needs to access the SAFLOK System, locate the individual, click their name, then click **Delete**.



5. When selecting Add, the User screen will appear. Enter the person's **Last Name**, **First Name**, **User ID**, and **Password**.

\* If the SAFLOK System is interfaced to the Property Management System (PMS) and the PMS requires a separate password for each User, the Password needs to be added in the **Interface Password** box.



### 5.3 System 6000 Transactions (continued)

6. When clicking the **Administrator box**, the person will have Authorization for all transactions, only persons with High Level access should have this authorization. For all other users, clicking the **boxes** under User Groups, gives the user that authorization group.

7. For more specific or individual authorizations, click the **Rights** tab and the following screen will appear.

Checking **Allow Remote Door Open** will give the user permission to use the LPI emergency key override feature.

8. Under System Authorizations, the user can be assigned very specific authorizations. Click on the check **boxes** to assign the authorization.

Click on the **Key Group Authorizations** to get to the next screen.

### 5.3 System 6000 Transactions (continued)

9. Key Group Authorizations allows the user being authorized specific rights based on each key group. The left side lists the Key Groups, and the right side lists the specific authorizations for that group. First select the **Key Group**, and then select **Authorizations**. The warning override box has two choices. Click next to Authorization 1 to allow the user to override warning messages. When completed, click **OK** at each screen until the screen with option to click **close** appears. The following screen will be displayed.

**Individual Authorizations**

User Name: \_\_\_\_\_

System Authorizations | **Key Group Authorizations**

**Key Groups**

- GUEST KEYS**
- CONNECTORS
- SUITE KEYS
- LIMITED USE KEYS
- FAILSAFE KEYS
- INHIBIT KEYS
- MEETING MASTER
- POOL MASTER KEYS
- HOUSEKEEPING KEYS
- HEALTH CLUB MASTER
- FLOOR KEYS
- SECTION KEYS
- ROOMS MASTER KEYS
- GRAND MASTER KEYS
- GENERAL MANAGERS APX
- EMERGENCY KEYS
- ELECTRONIC LOCKOUT KE
- SPK KEY
- PPK KEY

**Authorizations**

- ☒ [S] 100 - Make New Key
- ☐ [S] 101 - Make New Prereg Key
- ☐ [S] 102 - Make Duplicate Key
- ☐ [S] 103 - Make Duplicate Prereg Key
- ☐ [S] 104 - Make Resequene Key
- ☐ [S] 105 - Make Inhibit Key - Specific
- ☐ [S] 107 - Make Uninhibit Key - Specific
- ☐ [S] 109 - Make Cancel-A-Key-ID Key
- ☐ [S] 110 - MAKE CHANGE ROOM KEY
- ☐ 135 - Interrogate User Key
- ☐ [S] 200 - Change Current Key's Checkout
- ☐ [S] 201 - Check Out a Key
- ☐ [S] 210 - Cancel a Prereg
- ☐ [S] 211 - Check In a Prereg
- ☐ [S] 401 - Override Key Reservation
- ☐ 501 - Send Update Key to Lock via EMS
- ☐ 510 - Send Key to Remote Encoding File

**Warning Override**

- ☒ None
- ☐ Authorization 1

OK Cancel

10. Click **Cancel** to close the transaction.

**Select Users, Groups, or Staff**

Make A Selection

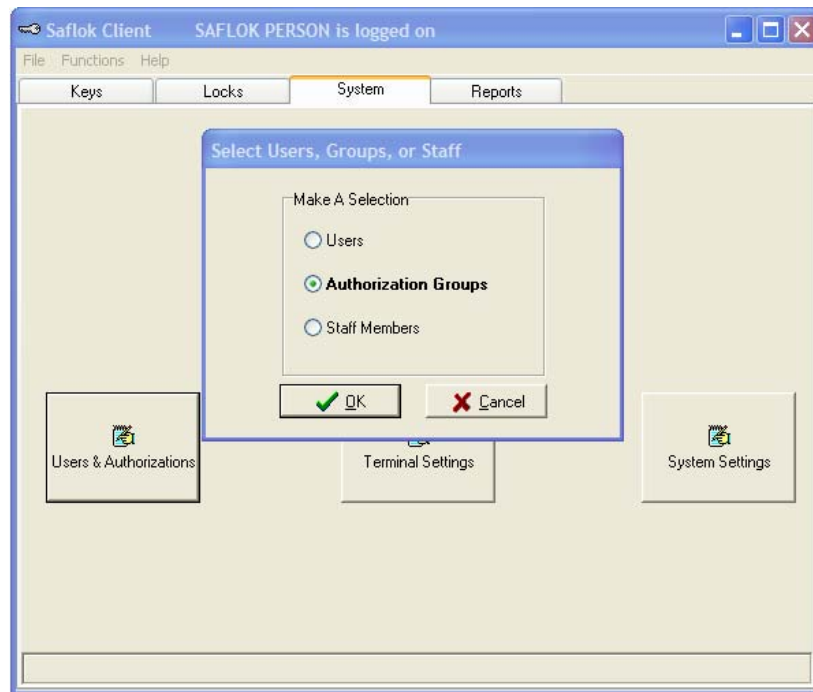
- ☒ **Users**
- ☐ Authorization Groups
- ☐ Staff Members

OK Cancel

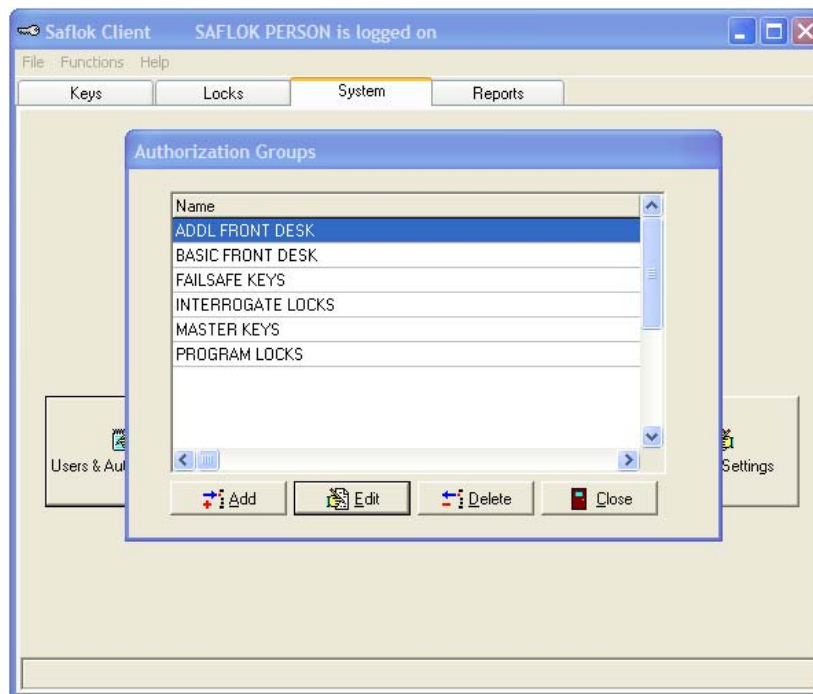
## 5.3 System 6000 Transactions (continued)

### Inputting Authorization Groups

1. Click **Authorization Groups** then **OK** to add, edit or delete Authorization Groups.

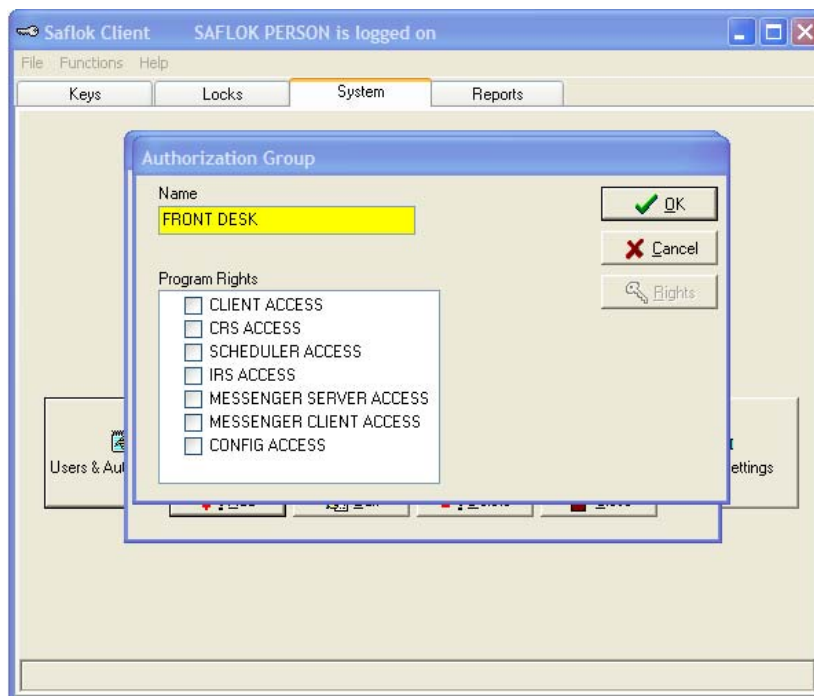


2. The following screen shows the authorization groups initially provided in your system. If making changes to a group, click on the group name, then click **Edit**. If deleting a group, click on the group name, then click **Delete**. If adding a new group, click **Add**.

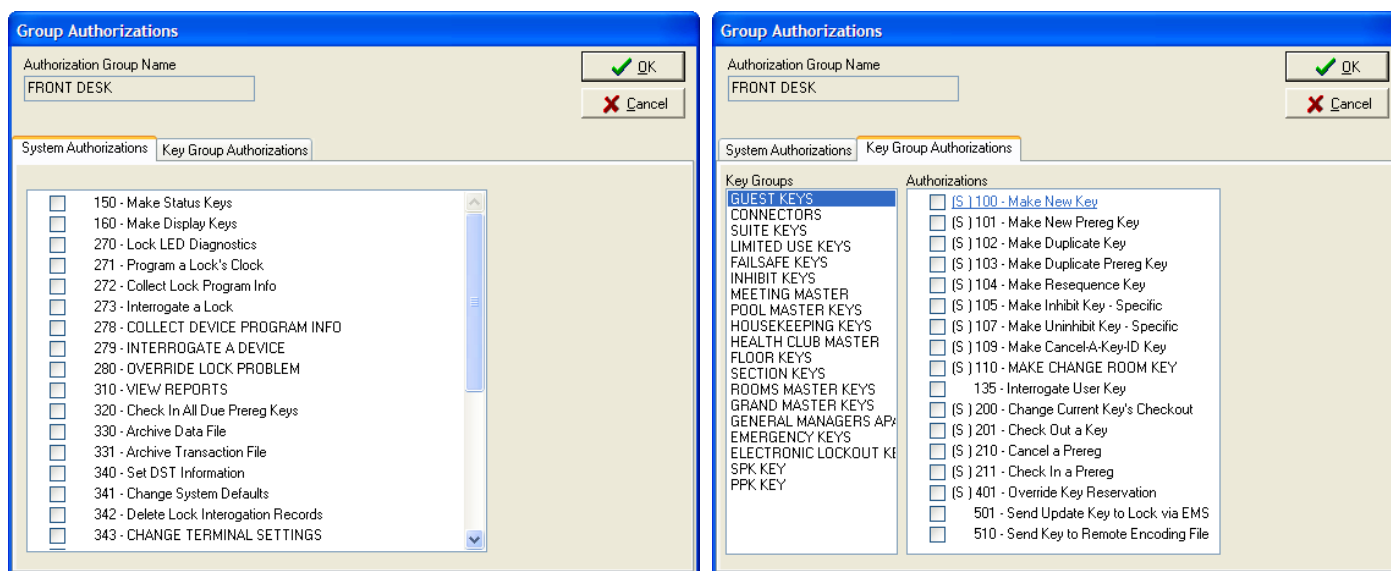


### 5.3 System 6000 Transactions (continued)

3. If adding a new Group, type the **Name** of the group, Then select the desired program rights for the group you are adding. Next, click on **Rights**. If editing an existing Group, select the group, then click on Rights.



4. To assign System Authorizations, click the box next to the authorization. Click the Key Group Authorization tab to set up specific authorizations for each key group. First click on the key group, then click the box next to each authorization to assign for that key group.

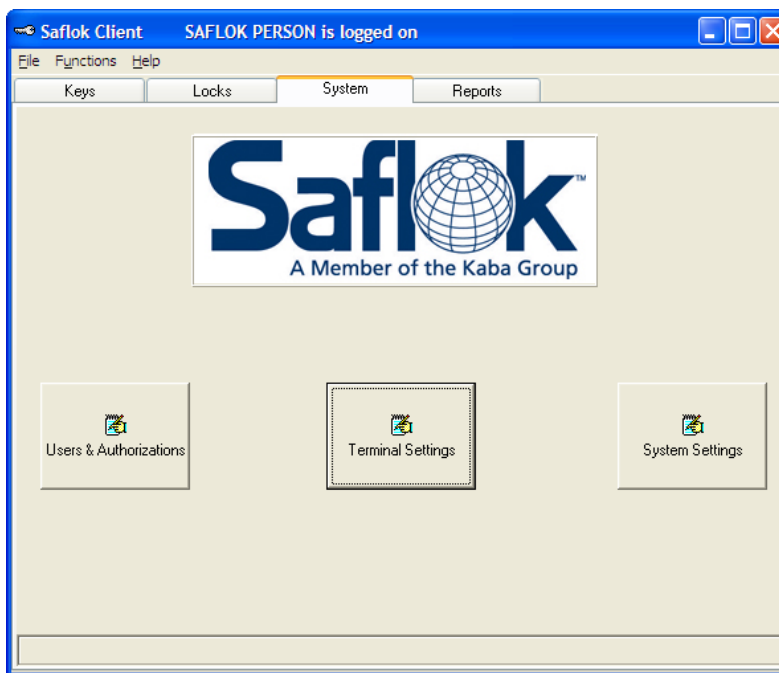


5. When finished assigning authorizations to the group, click on **OK** at each screen that appears, until the screen appears with the **cancel** function box to close the transaction.

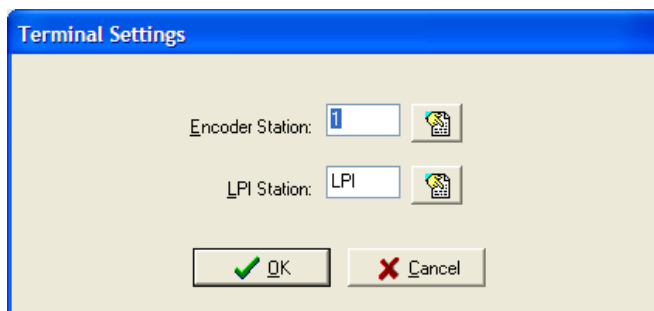
## 5.3 System 6000 Transactions (continued)

### B) Terminal Settings

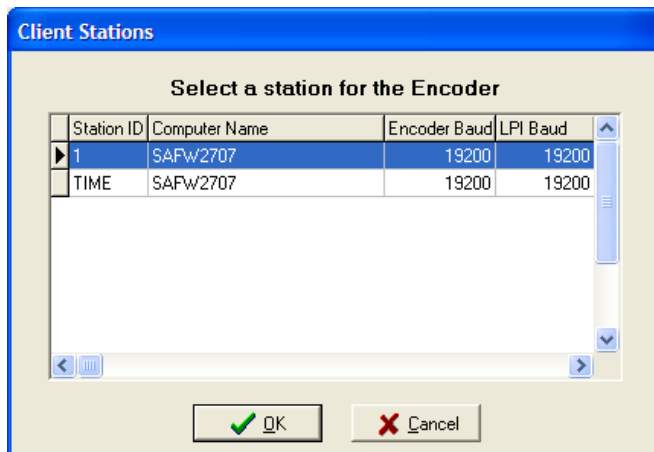
1Terminal settings allow the user to identify the Com Port the encoder or LPI station will plug into. Identifying each terminal with a specific encoder station number allows the user to make keys from any encoder, even if it is not connected directly the terminal they at which they are working. Under the **Systems** tab, click on **Terminal Settings** function box.



1. Click on the function **box** next to Encoder Station.

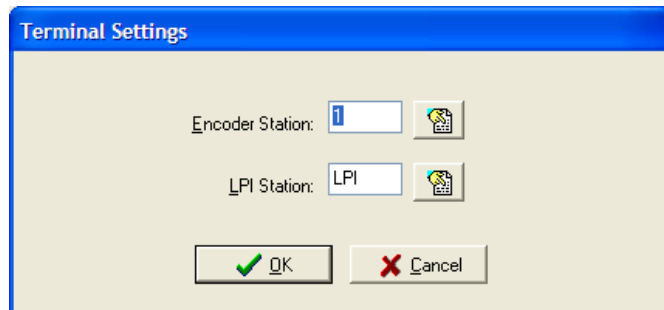


2. The settings that appear under this screen are populated from the CRS Setup. Click on the desired **station ID** to identify the port where the encoder will be connected. Click **OK** when completed.



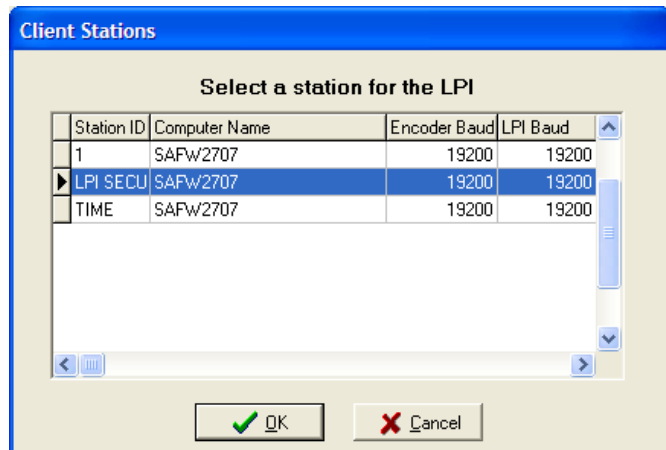
### 5.3 System 6000 Transactions (continued)

- Click on the function **box** next to the LPI.



The Terminal Settings dialog box has a blue title bar. It contains two input fields: 'Encoder Station' with the value '1' and a function box icon to its right; and 'LPI Station' with the value 'LPI' and a function box icon to its right. At the bottom are 'OK' and 'Cancel' buttons.

- The settings that show up under this screen come directly from the CRS Setup. Click on the desired **station ID** to identify the port that the LPI will plug into then click **OK**. When the Terminal Settings screen appears, click **OK** again.



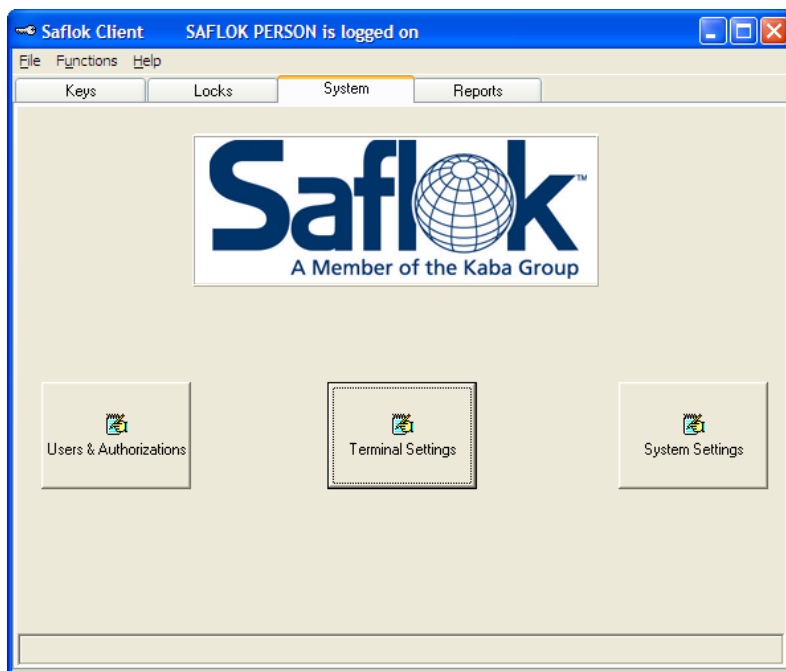
The Client Stations dialog box has a blue title bar. It contains a table titled 'Select a station for the LPI'. The table has four columns: Station ID, Computer Name, Encoder Baud, and LPI Baud. The row for 'LPI SECU' is selected. Below the table are 'OK' and 'Cancel' buttons.

Station ID	Computer Name	Encoder Baud	LPI Baud
1	SAFW2707	19200	19200
▶ LPI SECU	SAFW2707	19200	19200
TIME	SAFW2707	19200	19200

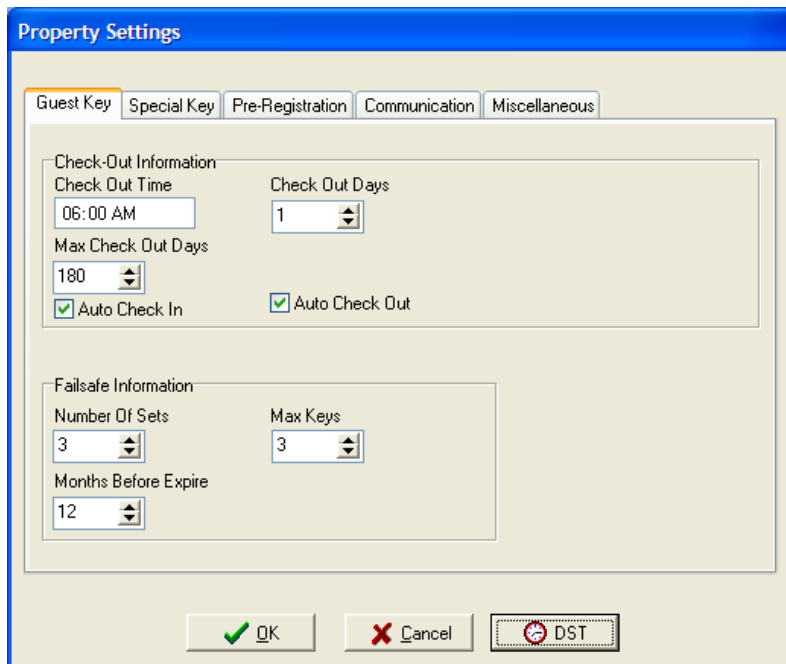
## 5.3 System 6000 Transactions (continued)

### C) System Settings

1. System settings are where default settings such as Check-in/Check-out, Pre-registration, Fail-safe keys, and Key Expiration information, can be modified. Under the **System** tab, click the **System Settings** function box.



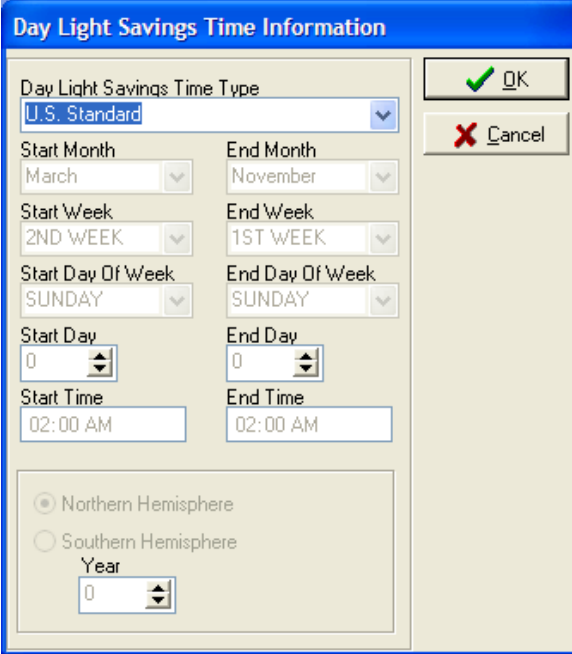
2. The Property Settings screen is where all default settings can be modified. Double click inside the box to modify the desired fields. This will highlight the current setting. Start typing the modified information.



The **DST** button is used to set the daylight savings time information. The DST screen is shown on the next page.

### 5.3 System 6000 Transactions (continued)

1. After clicking the **Pull down** for Day Light Savings Time Type, the option of pre-set DST appears. Click on the option that applies to your time zone. When completed click **OK** and then click **OK** at the Property Settings screen.



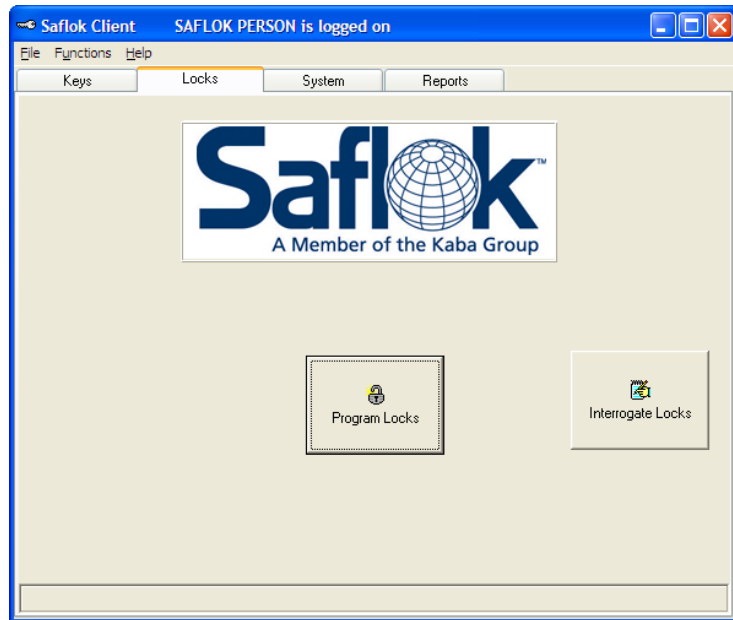
The image shows a dialog box titled "Day Light Savings Time Information". It contains several fields for configuring DST settings. The "Day Light Savings Time Type" is set to "U.S. Standard". The "Start Month" is "March" and the "End Month" is "November". The "Start Week" is "2ND WEEK" and the "End Week" is "1ST WEEK". The "Start Day Of Week" is "SUNDAY" and the "End Day Of Week" is "SUNDAY". The "Start Day" and "End Day" are both set to "0". The "Start Time" and "End Time" are both set to "02:00 AM". At the bottom, there are radio buttons for "Northern Hemisphere" (selected) and "Southern Hemisphere", and a "Year" field set to "0". On the right side of the dialog, there are "OK" and "Cancel" buttons.

Day Light Savings Time Information	
Day Light Savings Time Type U.S. Standard	
Start Month March	End Month November
Start Week 2ND WEEK	End Week 1ST WEEK
Start Day Of Week SUNDAY	End Day Of Week SUNDAY
Start Day 0	End Day 0
Start Time 02:00 AM	End Time 02:00 AM
<input checked="" type="radio"/> Northern Hemisphere <input type="radio"/> Southern Hemisphere	
Year 0	
OK Cancel	

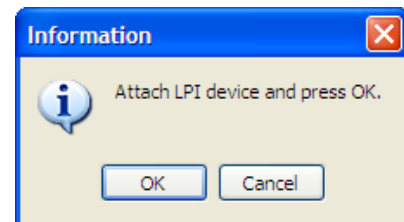
## 5.4 Programming and Interrogating Locks

### A) Programming:

1. Click on the **Locks** tab, and the following screen will appear with two function boxes. Confirm that the LPI device is plugged into the computer terminal. To program locks, click the **Program Locks** function box.



2. The screen below will appear indicating the LPI device needs to be connected to the terminal. Reference the pictures on the next page for the proper connections. Once everything is connected, click **OK**.



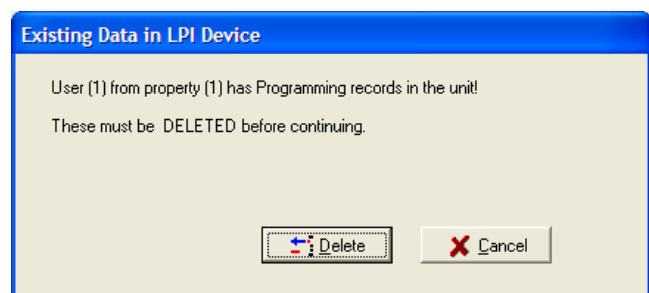
## Programming and Interrogating Locks (continued)

The Handheld connects to the computer terminal using a 9 pin RS232 download cable.

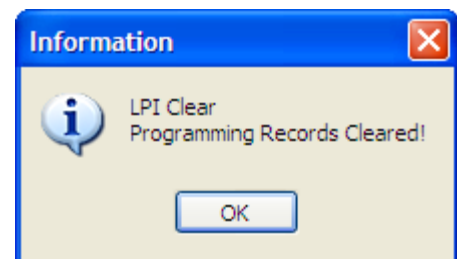


The phono connector on the **download cable** plugs into the side of the Handheld, the 9 Pin RS232 connector plugs into the serial port on the computer terminal as shown above.

3. The Existing Data in the LPI Device screen appears as a warning screen to notify the user if there are room numbers already in the LPI's memory. These room numbers must be deleted to continue. Click the **Delete** button to clear the memory.



4. The following screen confirms the memory as being cleared. Click on **OK** to continue.

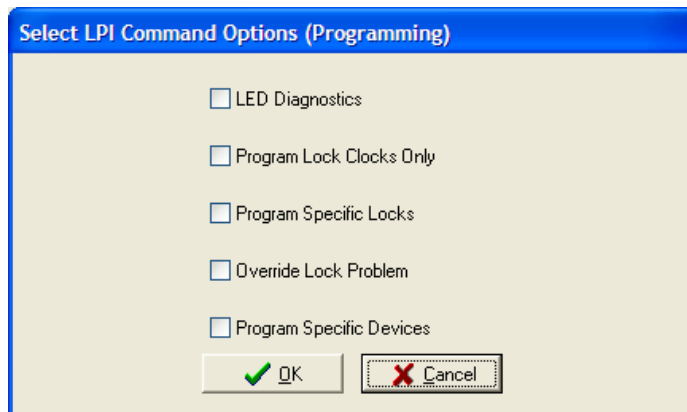


## Programming and Interrogating Locks (continued)

5. At this time, the handheld will display the following screen. This message will remain on the screen while the information is downloaded from the PC to the handheld.

**Waiting for next  
Command from PC  
Please Wait, or  
Press ESC to abort**

6. The Select LPI Options (Programming) screen will be displayed at the terminal, click on **Program Specific Locks** and then click **OK** to continue.



7. Click the **down arrow** next to lock groups and the screen displayed at the top right will appear. Click on the **Lock Group** to be programmed and the screen to the top left will appear. The room numbers for the locks to be programmed must be selected.

*To select one room:*

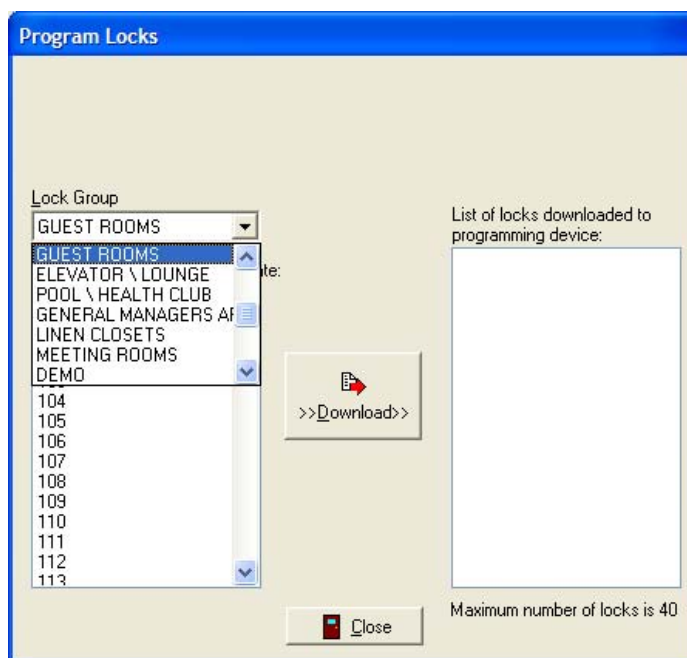
Use the arrow down key to scroll through the room numbers and click on the room number.

*To select more than one room in sequential order:*

Click on the first room number, hold the shift key down, then click on the last key number.

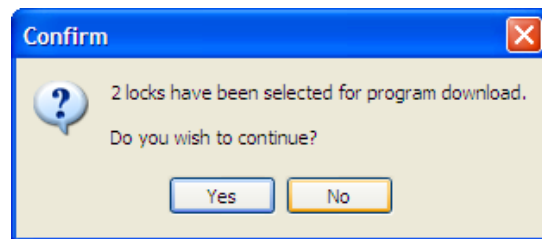
*To select more than one room not in sequential order:*

Hold down the control key while clicking on each room number. After all the room numbers are selected, click on the **Download** button to continue.

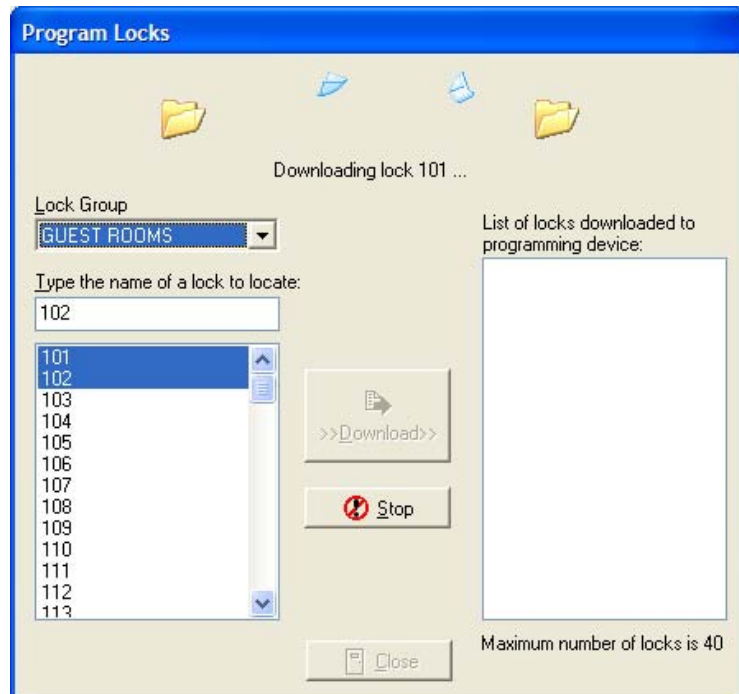


## Programming and Interrogating Locks (continued)

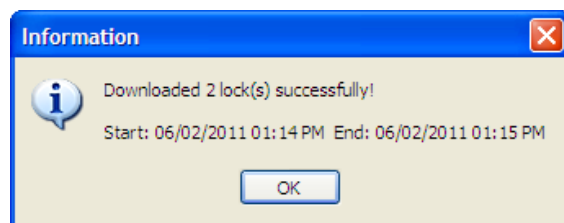
8. The screen below displays the number of locks selected. Click on **Yes** to continue.



9. The following screen will appear while the locks selected begin downloading. After a lock is finished downloading, it will display in the box on the right



10. After the download is complete the Information screen will appear indicating the locks were downloaded successfully to the LPI. Click on **OK** then click **Close**.



## Programming and Interrogating Locks (continued)

### Screens at Handheld terminal

HH5 MAIN MENU  
CURRENT DATA EXPIRED  
1. Communicate w/PC  
2. **Take Unit to Locks**

11. The screen above will be displayed on the Handheld. Press **2 (Take unit to locks)** and **ENTER** at the Handheld terminal.

12. The screen M254 will be displayed instructing to disconnect the handheld from the terminal and connect the probe. **Press any key** when completed.

M254: Disconnect  
Terminal Cables and  
Connect LPI Probe  
**\*\*PRESS ANY KEY\*\***



*Handheld (LPI) with Smartcard probe connected*



*Handheld (LPI) with RFID probe connected*

## Programming and Interrogating Locks (continued)

The handheld will then display the following menu:

```
06-16-11 11:01A   STD
1. Reconnect to PC
2. Program Lock
Select choice ?
```

### Hand Held Terminal options explained

Using the **arrow down** key will scroll down to additional functions on the menu screen. Below are two other screens with options they display:

**Option 3.** Update locks clock (Used for updating the clock in the lock)

**Option 4.** Interrogate Locks (Used to extract all the keys used in the lock)

```
06-16-11 11:01A   STD
3. Update Lock Clock
4. Interrogate Locks
Select choice
```

**Option 5.** Lock vers/LED Diag (Used to display version and diagnose key problems)

```
06-16-11 11:01A   STD
4. Interrogate Locks
5. Lock Vers/LED Diag
Select choice
```

13. Take the terminal and probe to the lock. Select **2** and **enter** to bring up the Program Lock screen shown. This screen will display all the locks that have been downloaded into the unit

```
S005: Program Lock
1. 101
2. 104
enter 1-2 (0=More) 0
```

**Note:** Only four rooms can be displayed on each screen. To select a room number, type the **number** that appears in front of the room to be programmed then press **enter**. To display additional rooms in memory, type **0** then **enter**.

## Programming and Interrogating Locks (continued)

14. The following screen will be displayed on the handheld. At this point, **press any key** on the handheld.

M252: Press Any Key  
And THEN Insert LPI  
Probe into Lock!  
(Press ESC to Abort)

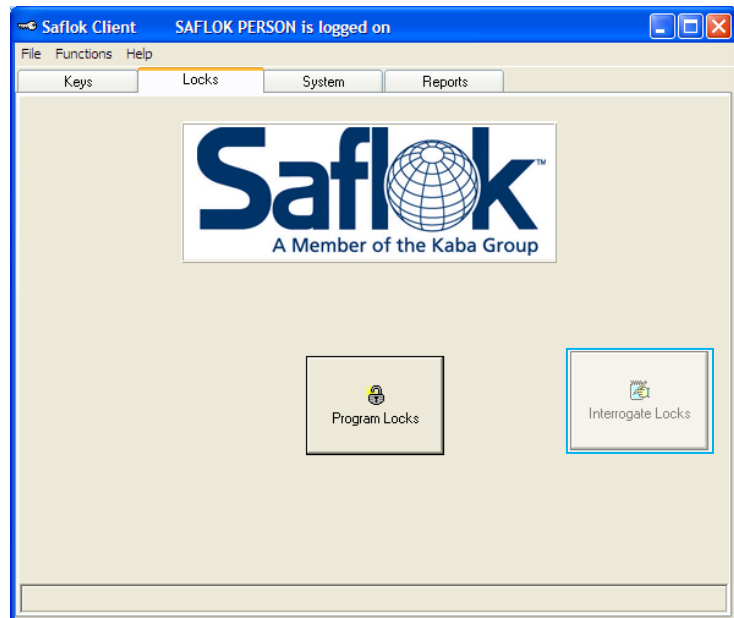
15. After the lock is programmed, the handheld will display the screen M247: indicating that the lock has been successfully programmed. **Press any key** on the handheld to get back to the Program Lock menu. Continue the same process for each additional room, or if completed put the handheld back in the charger base leaving it disconnected from the terminal until ready to use again.

**M247: LOCK 101**  
**WAS PROGRAMMED**  
**SUCCESSFULLY**  
**\*\* PRESS ANY KEY\*\***

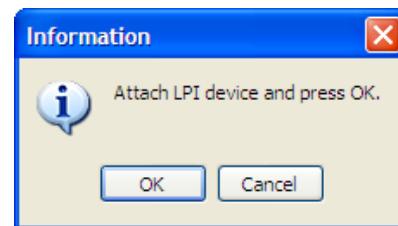
## 5.4 Programming and Interrogating Locks (continued)

### B) Interrogating Locks

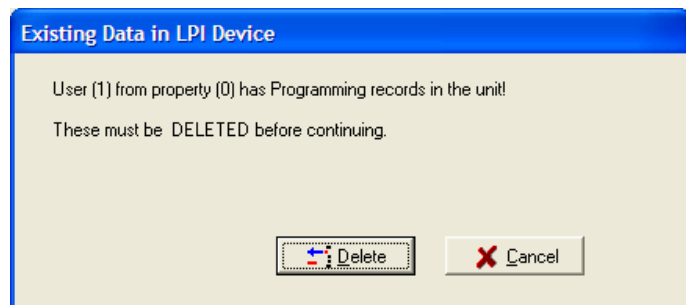
1. To interrogate a lock click on the **Locks** tab, then click on the **Interrogate Locks** button.



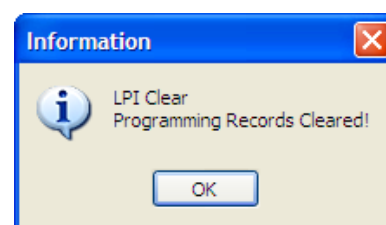
2. Attach the LPI Device to the RS232 cable, and then click on **OK**.



Note: If the LPI Device was used for programming or interrogating, you will receive this message. Click on **Delete**.



3. The information message that all programming records cleared will appear, click **OK**. Next, take the LPI Device to the lock and perform the lock interrogation.



## 5.4 Interrogating Locks (continued)

4. On the Hand Held screen, **select option 2-Take Unit to Locks, press enter.**

HH5 MAIN MENU  
CURRENT DATA EXPIRED  
3. Communicate w/PC  
4. **Take Unit to Locks**

5. Plug the LPI probe into the Hand Held terminal and select option **#4 - Interrogate Locks, press enter.**

06-16-11 11:01A STD  
3. Update Lock Clock  
4. Interrogate Locks  
Select choice

6. Select Probe type if option if option is applicable, **press Enter.**

Select LPI Probe:  
1. Smartcard P#74333  
2. Mag or RT P#Other

7. Press any key and insert probe into lock as instructed on the Hand Held screen.

M252: Press Any Key  
And THEN Insert LPI  
Probe into Lock!  
Press ESC to Stop

*\*Note: The Hand Held will prompt user while the lock is being interrogated. The hand Held will beep continuously until completed.*

8. The Hand Held screen will display the lock was interrogated successfully after completion. **Press any key**

M247: Lock 101  
WAS INTERROGATED  
SUCCESSFULLY  
\*\* PRESS ANY KEY \*\*

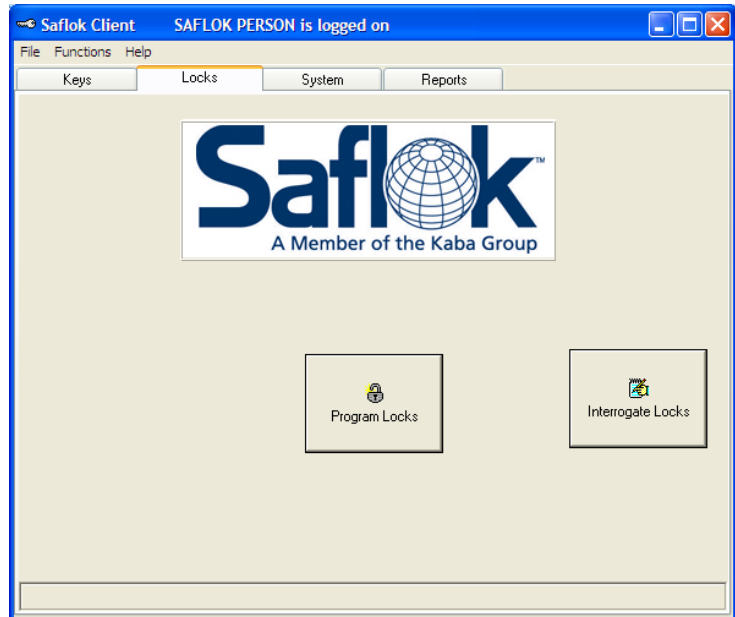
9. As instructed on the Hand Held screen, press ESC if you are finished interrogating locks. You can continue to interrogate more locks by pressing Enter

M243: REMOVE PROBE  
Press Any Key to  
Interrogate More Locks or  
ESC to Stop

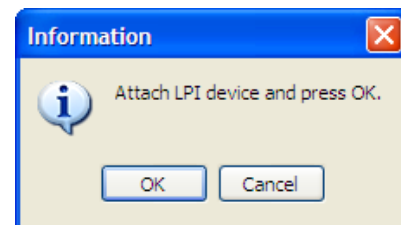
## 5.4 Interrogating Locks (continued)

10. Connect the Hand Held to the computer using the download cable.

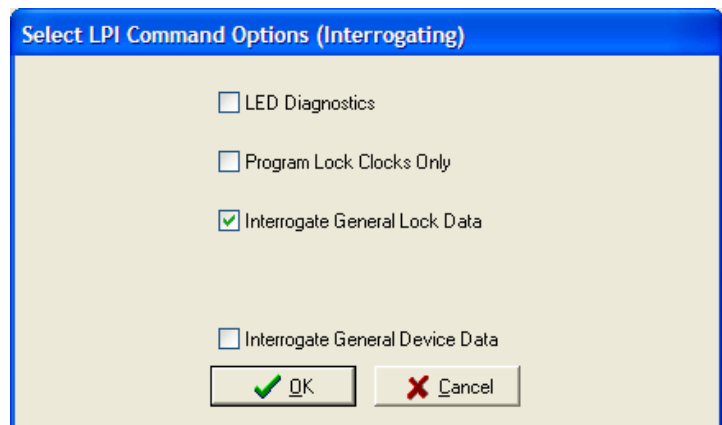
11. Select Interrogate Locks on the Saflok Client screen



12. Attach the LPI Device to the RS232 cable, and then click on **OK**.

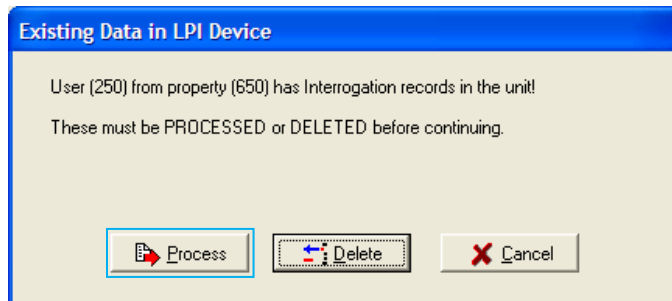


13. Select Interrogate General Lock Data And select **OK**

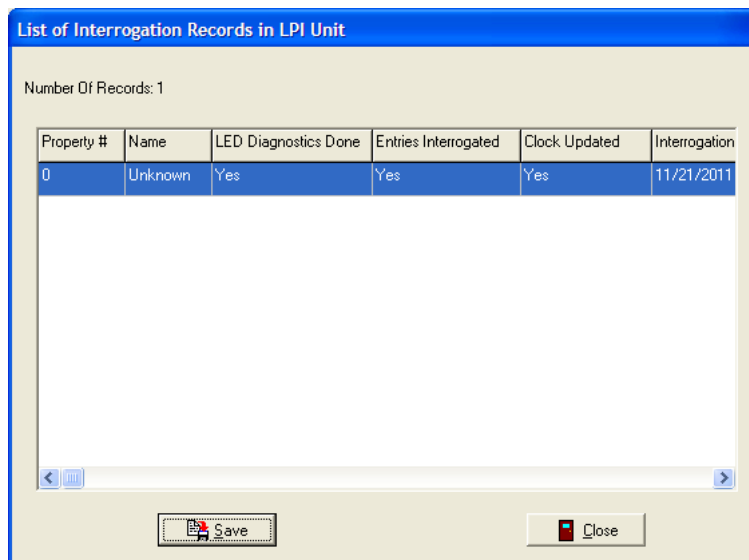


## 5.4 Interrogating Locks (continued)

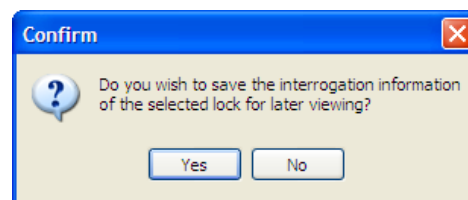
14. Select Process to begin uploading the lock interrogation report to the Client computer.



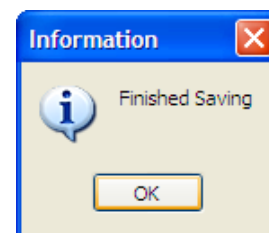
15. Highlight the Lock Name/Number you choose to save the file for later viewing, select **Save**.



16. Select Yes when the confirmation prompt appears to continue to save the lock interrogation report.



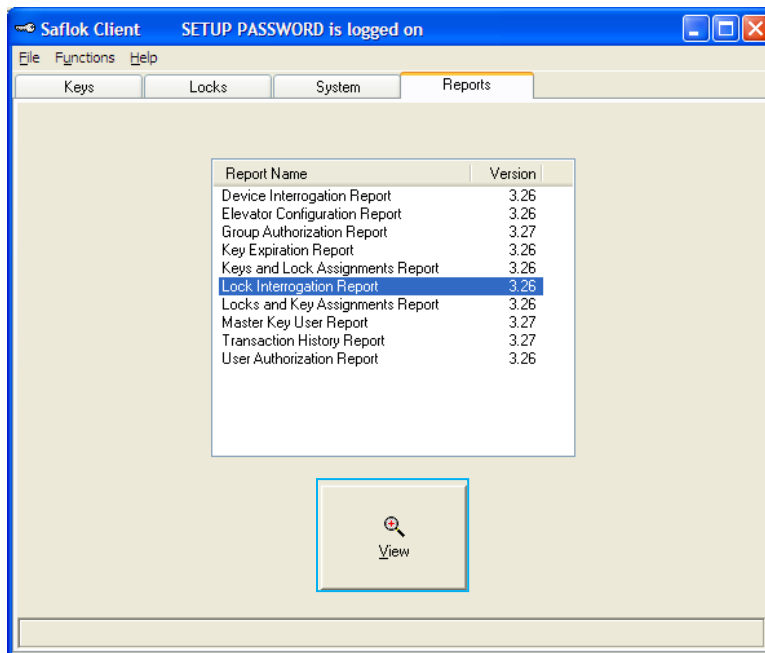
17. Select OK button once when prompted when the file is finished saving



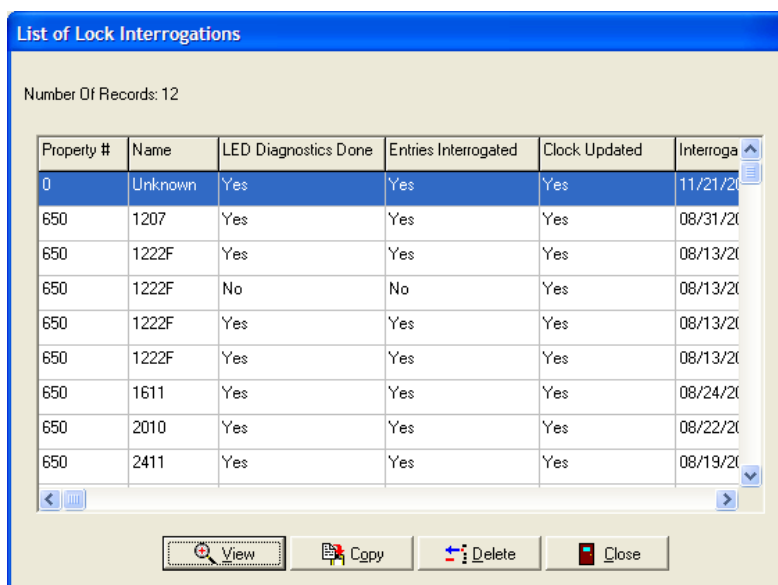
## 5.5 Viewing the Lock Interrogation report

1. Select the Reports tab in Saflok Client.

2. Select Lock Interrogation Report and select the View Button

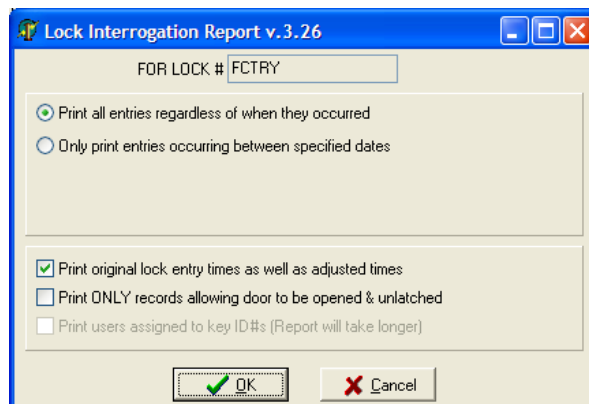


3. Highlight the Lock name/number from the list of lock interrogations, **select View**.

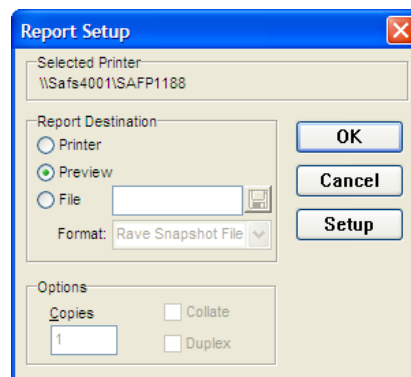


## 5.5 Viewing the Lock Interrogation report (Continued)

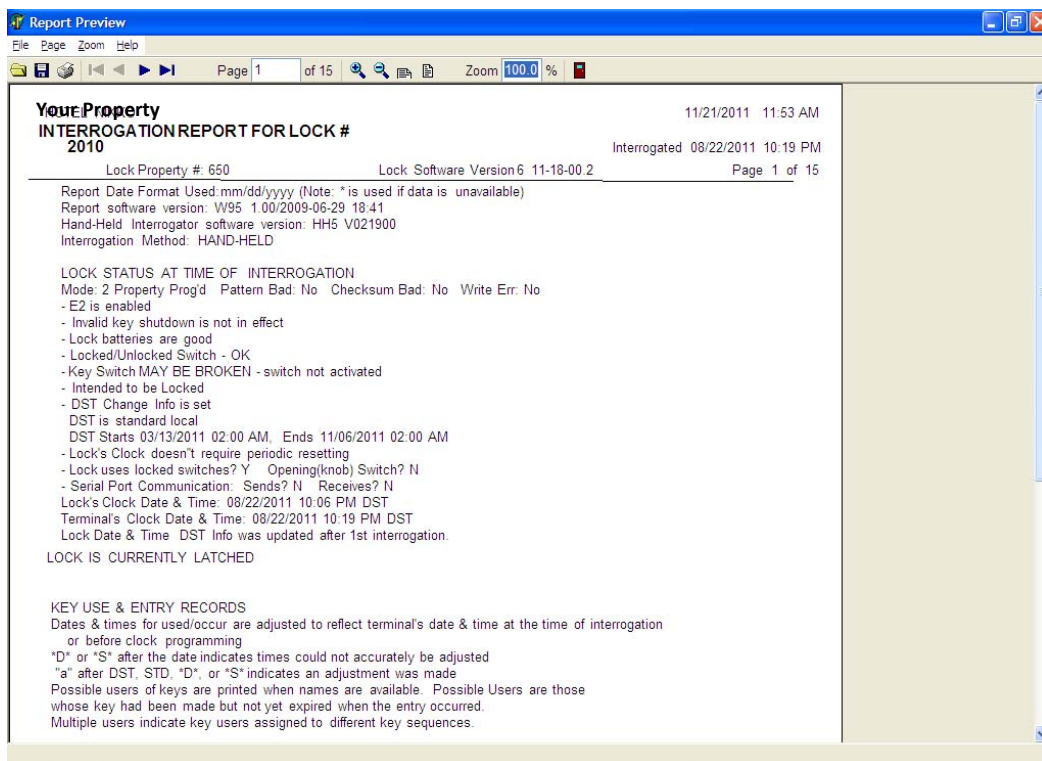
4. Once the specific lock report has been chosen, Select the print out criteria you require. **Select OK**



5. The report setup will now appear. Select preview to view the report on the computer screen or the Printer you wish to send the report to for a hard copy.



\* Example of Lock Interrogation report, Page #1 below



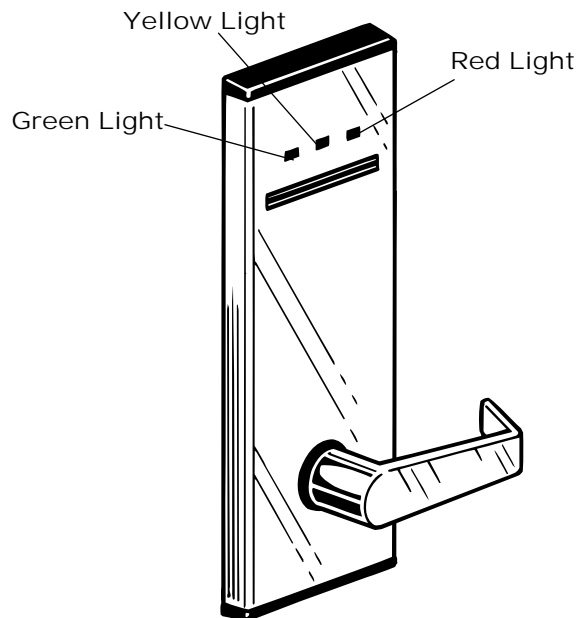


## Section 6

Diagnostics Error Codes

## 6.1 Light Indicators

The three light indicators (green, yellow and red) are located on the face of the lock. These lights provide lock status information when a keycard is inserted into the lock and removed. When using an RFID lock, the following LED indicators will appear when a RFID card is presented to the lock reader.



### Green Light

A green light will flash for approximately six seconds when a correct keycard is used. This light indicates that the locking mechanism has been released and the door handle can be depressed to open the door. If the handle is not depressed while the green light is flashing, the locking mechanism will be secured, and the keycard must then be reinserted and removed from the lock to release the latch.

## 6.1 Light Indicators (continued)

### Yellow Light

**1. Flashing Yellow Light (12 Times)**

This flashing yellow light indicates that a correct keycard has been used in the lock, but the dead bolt or privacy button/switch has been set from inside the room.

**2. Fast Flashing Yellow Light (8 Times)**

This fast flashing yellow light indicates that a correct keycard has been used in the lock, but entry is denied for one of the following reasons:

- a. The door has been electronically double locked by an electronic lockout keycard.
- b. The Guest, Alternate Guest, or Failsafe keycard has been automatically inhibited, or the lock has been inhibited by the inhibit key.
- c. The keycard was programmed with an expiration date and time. The light indicates that the keycard was used after this expiration date and time.
- d. The Master keycard was programmed to work only during certain shift hours of the day, or to work only on certain days of the week. The light indicates that the keycard used was not programmed for that shift or day.

**3. Two Yellow Flashes**

Two yellow flashes indicate that an incorrect keycard was used in the lock.

**4. One Yellow before Green or Yellow**

The master keycard being used is about to expire. This light will appear seven days prior to the expiration date.

### Red Light

**Alternately Flashing Red Light**

A red light will flash alternately with another light when the lock batteries are low.

**Simultaneously Flashing Red Light**

A red light will flash simultaneously with another light when the clock in the lock needs to be reset.

**Red Flash (1 or 2 Times)**

If a red light flashes one or two times when a keycard is used in the lock, the keycard was used improperly (upside down, backwards, or not removed). If a red light flashes one or two times when no keycard is used, the key switch is stuck.

### **Yellow and Red Lights**

Two yellow and red flashes indicate that the lock was unable to properly read the lock code on the keycard.

### No Lights

If no lights appear when a keycard is used:

1. An invalid key shutdown is in effect.
2. The key switch is broken.
3. The lock batteries are dead.

## 6.2 Special Function Light Indicators

### Resequenece Keycard

The Resequenece keycard is used to update the sequence number stored in the lock's memory when the number of new keycards made but not used in the lock exceeds the programmed sequence range for that keycard. When a Resequenece keycard is used, the following lights will appear:

- **Flashing Green and Yellow (6 times)**  
These lights indicate that the Resequenece Keycard worked properly.
- **Flashing Yellow (6 times)**  
This light indicates that the lock was not out of sequence.

When using a Resequenece keycard for guest levels, if a red light flashes one time before the flashing green/or yellow lights, a new Guest keycard must be made.

### Inhibit Keycard

The Inhibit keycard affects the Guest, Alternate Guest and Failsafe keycards and prevents the current keycards for these keycard types from opening the lock. The purpose is to prevent guests who have checked out of the room from later re-entering the room if their keycard has not expired. It is generally used after the room has been cleaned and is ready for the next guest.

When the Inhibit keycard is used in the lock, the following lights will appear:

- **Red Flash (1) Followed by Flashing Yellow (12 Times)**  
These lights indicate that the Guest keycards were successfully inhibited, and the current Guest-level codes in the lock's memory will no longer allow entry.
- **Flashing Yellow (12 Times)**  
This light indicates that the lock has already been inhibited.

### Electronic Lockout Keycard

The Electronic Lockout keycard is used to double lock the door from the outside and prevents other keycards (except the Security/Emergency keycard) from activating the lock. The lock can be programmed so that there is one keycard to set the electronic lockout and a separate keycard to remove the electronic lockout, or one toggle keycard that performs both functions.

When the Electronic Lockout keycard is used, the following lights will appear:

- **Red Flash (1) Followed by Flashing Yellow (12 Times)**  
These lights indicate that the electronic lockout has been set.
- **Green Flash (1) Followed by Flashing Yellow (12 Times)**  
These lights indicate that the electronic lockout has been removed.

## **6.2 Special Function Light Indicators (continued)**

### **Primary or Secondary Program Keycard (PPK/SPK)**

The Primary Program keycard (PPK) is used in conjunction with Program Information keycards (PI) and Program Status (PS) keycards for programming locks and for performing special functions. It is also used to reprogram the current Secondary Program keycard (SPK), or remaster a different SPK into a lock.

The SPK is used to reprogram the current PPK, or remaster a different PPK into a lock. When these keycards are used, a slow flashing yellow light will appear for 20 seconds.

### **E2 Erase Keycard**

The E2 Erase keycard is used to remove the lock code information stored in the lock's memory. When this keycard is used, the lock's memory will be completely erased, and no valid keycards will work in the lock. The Primary Program keycard (PPK) must be used before the E2 Erase keycard is used, yellow and green lights will flash two times simultaneously, then the yellow light will flash once.

### 6.3 Invalid Lock and Mode Indicators

The SAFLOK is designed to operate in Mode 2 when it is programmed and properly functioning. If a lock is not operating in Mode 2, and a valid keycard is used, you will see one of the following patterns. These lights indicate that there is a physical problem with the lock that must be corrected before the lock will allow keycards to operate normally.

**1. 1 Green, 1 Yellow, 1 Red, Then All Lights Flash (4 Times)**

These lights indicate that the lock is in the Test Mode, and the storage chip E2 has failed. No keycard will open the lock, and the lock must be drilled to access the room.

**2. All Lights Flash (4 Times)**

These lights indicate that the lock is in Mode 0 and that there is a problem with the circuit board. Use the E2 erase keycard to change the mode to Mode 1, and program the lock using the LPI probe and terminal. Use the new keycard to open the door and replace the circuit board.

**3. 2 Green. Then All Lights Flash (4 Times)**

These lights indicate that the lock is in Mode 1, and is not programmed. Program the lock using the LPI probe and terminal. Use the new keycard to open the door and replace the circuit board.

**4. 2 Green and Yellow Flashes. Then All Lights Flash (4 Times)**

These lights indicate that the lock is in Mode 3 and that there is a programming problem with the programming chip in the lock's circuit board. Open the door using the PPK keycard followed by a valid Master keycard. Remove the lock and replace the circuit board.

**5. 2 Red Flashes. Then All Lights Flash (4 Times)**

These lights indicate that the lock is in Mode 4, and that the storage chip (E2) is disabled. Use the PPK keycard followed by the E2 Disable/Enable keycard to enable the lock.

**6. 2 Yellow Flashes, Then All Lights Flash (4 Times)**

These lights indicate that the lock is in Mode 5, and that there is a problem with the motor switch or the motor is jammed. Open the door using the PPK keycard followed by a valid Master keycard. Then, remove the lock and replace the lockset.

## 6.4 Display Keycards

You can generate a number of special Display keycards that will enable you to check the status of many of the lock's features. When these keycards are used, a variety of light combinations will flash to indicate the current status of the feature being tested. Display keycards are normally used for diagnostics and troubleshooting, and additional details regarding their use can be found in the Installation and Programming Instruction Manual.

### Light Values

Each light has a different value. The green light has a value of 100, the yellow light has a value of 10 and the red light has a value of 1. To interpret the response, you must count the number of times that each light flashes and multiply this by its value.

For example, if the green light does not flash, the yellow light flashes two times, and the red light three times, the response has a total value of 23:

Green Light Does Not Flash	=	0	(100x0)
Yellow Light Flashes 2 Times	=	20	(10x2)
Red Light Flashes 3 Times	=	<u>3</u>	(1x3)
<b>Total Value</b>	=	<b>23</b>	

### Display Elements

Each Display keycard will provide you with several pieces of information. Each piece of information is known as an element, and you must be familiar with the elements that will be displayed in order to understand the response. For example, the Display Clock Time keycard will give you information on the following elements:

Date/Time/DST Problem (if any) (0-4)  
 DST Status (0-1)  
 Hours (In Military Time) (0-23)  
 Minutes (0-59)

When you use the card the response will begin and end with a delimiter that consists of all three lights flashing simultaneously. This delimiter is also used to separate the responses to each element.

## 6.4 Display Keycards (continued)

### Display Keycard Example

For example, when using the Display Clock Time keycard, you will first see the delimiter. ####WHAT IS A DELIMITER?#### After this delimiter, the response to the first element will appear (Date/Time/DST Problem). If there is a date, time, or DST problem, the red light will flash from one to three times. You can then refer to the problem analysis to determine the nature of the problem. If there is not a date, time, or DST problem, the red light will not flash. The delimiter will then flash one time.

After this delimiter, the response to the second element (DST Status) will appear. If the red light flashes one time, the DST Status is one, indicating that the lock's clock is running on Daylight Saving Time. If the lock's clock is not running on Daylight Saving Time, the red light will not flash. The delimiter will then flash one time.

After this delimiter, the response to the third element (Hours) will appear. This response will consist of yellow and/or red lights to indicate the hours of the day. For example, if the lock's clock is now at 2 PM, the hours will be represented by one yellow flash (value of 10) and four red flashes (value of 4) ( $10 + 4 = 14$  hours, or 2 p.m. Military Time). The delimiter will then flash one time.

After this delimiter, the response to the final element (Minutes) will appear. This response will also consist of yellow and/or red lights to indicate the minutes of the hour. For example, if the lock's clock is now at 43 minutes, the minutes will be represented by four yellow flashes (value of  $10 \times 4$ ) and three red flashes (value of  $1 \times 3$ ). The delimiter will then flash one time.

When you first use Display keycards it may be difficult to understand the flashing lights. However, with a little bit of practice you will be able to use the keycards with little difficulty. For some of the keycards, you simply insert the keycard into the lock and remove immediately. You can then observe the flashing lights. For other Display keycards, you must follow certain specified procedures.

On the following pages you will find the light combinations, elements and any special instructions for using each of the Display Keycards.

## 6.4 Display Keycards (continued)

### Display EPROM Version

This Display Keycard provides the month, day, year and version number of the lock's software program.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
COMPATIBILITY CODE		X	X
Delimiter	-	-	-
MONTH (1-12)		X	X
Delimiter	-	-	-
DATE (1-31)		X	X
Delimiter	-	-	-
YEAR (00-99)		X	X
Delimiter	-	-	-
VERSION APPLICATION			X
Delimiter	-	-	-

### Display Clock Time

This Display Keycard tests for a "clock not set" problem and displays the lock's current time. The time includes DST or STD status, the hour (military) and minutes.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
DATE/TIME/DST PROBLEM CODE (0-4)*	X	X	
Delimiter	-	-	-
DST STATUS (0=Not DST, 1=DST)	X	X	
Delimiter	-	-	-
HOURS (0-23) (Military Time)		X	X
Delimiter	-	-	-
MINUTES (0-59)	X	X	
Delimiter	-	-	-

**\*Date/Time/DST Problem Analysis.** If one of the following problems occurs, refer to the Troubleshooting Section of the Lock Installation Manual for handling instructions:

- 0 = No Problem
- 1 = The lock is in Mode 0 or 1 and the date/time is not programmed
- 2 = The lock needs new DST information programmed in
- 3 = The lock has lost the time for some reason
- 4 = Clock has not been reset with 12 months

## 6.4 Display Keycards (continued)

### Display Date

This Display Keycard provides the lock's month, day, century and year date.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
DATE/TIME/DST PROBLEM CODE (0-4)*			X
Delimiter	-	-	-
MONTH (1-12)		X	X
Delimiter	-	-	-
DATE (1-31)		X	X
Delimiter	-	-	-
CENTURY (18-21)	X		X
Delimiter	-	-	-
YEAR (00-99)		X	X
Delimiter	-	-	-

**\*Date/Time/DST Problem Analysis.** If one of the following problems occurs, refer to the Troubleshooting Section of the Lock Installation Manual for handling Instructions:

- 0 = No Problem
- 1 = The lock is in Mode 0 or 1 and the date/time is not programmed
- 2 = The lock needs new DST information programmed in
- 3 = The lock has lost the time for some reason
- 4 = Clock has not been reset with 12 months

### Display Auto Unlatch/Latch Status

This Display Keycard will indicate whether or not there is a problem with the lock's automatic unlatch and latch.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
AUTOLATCH STATUS (0-5)*			X
Delimiter	-	-	-

**\*Autolatch Status Analysis.** If one of the following problems occurs, refer to the Troubleshooting Section of the Lock Installation Manual for handling instructions:

- 0 = Autolatch/Unlatch is Operational (No Problem)
- 1 = Lock is not functioning Properly or is not Programmed (Mode 0,1,3)
- 2 = Lock cannot perform Auto Unlatch/Latch because it has no motor (Select V, ECU, RCU)
- 3 = The lock is not programmed to perform Auto Unlatch/Latch
- 4 = Lock should perform Auto Unlatch/Latch but cannot because its DST Information needs reprogramming.
- 5 = Lock should perform Auto Unlatch/Latch but cannot because its clock Date/Time Need to be reset.

## 6.4 Display Keycards (continued)

### Display Last Two Key Entry Records

This Display Keycard provides information on the two most recent key entries.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
1 <sup>st</sup> KEY LEVEL (0-14)		X	X
Delimiter	-	-	-
1 <sup>st</sup> KEY ID# (0-255)	X	X	X
Delimiter	-	-	-
1 <sup>st</sup> KEY # TIMES OPENED (0-15)		X	
Delimiter	-	-	-
2 <sup>nd</sup> KEY LEVEL (0-14)		X	X
Delimiter	-	-	-
2 <sup>nd</sup> KEY ID# (0-255)	X	X	X
Delimiter	-	-	-
2 <sup>nd</sup> KEY # TIMES OPENED (0-15)		X	
Delimiter	-	-	-

**Note:** Only the two most recent LPI records with opening capabilities will be displayed. If the lock has no LPI records or less than two records, the values above for the missing field will be zero (no lights).

### Display Knob Turn Switch

This Display Keycard will test the operation of the knob/handle switch, wire harness and connectors. This keycard should be used with the door in the open position so that the knob can be turned from inside before using the keycard.

1. With the door open, turn the inside handle and hold it. Use the Display Keycard. You should see the delimiter, followed by one red flash, followed by the delimiter.
2. Release the handle. Use the Display Keycard again. This time the delimiter should flash twice. A red flash should not appear.

If the proper lights do not appear during both tests, the knob/handle turn switch is not working properly, and the exterior housing should be replaced. The circuit board can be reused unless it exhibits the same problem in another lock.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
KNOB TURN SWITCH STATE (0-1)			X
(0 = Not Turned, 1 = Turned)			
Delimiter	-	-	-

## 6.4 Display Keycards (continued)

### Display Dead Bolt/Privacy Button/Switch Status

This Display Keycard tests the operation of the dead bolt/privacy switch, wire harness and connectors. This keycard should be used with the door in the open position so that the dead bolt switch can be set.

1. With the door open, put the thumb turn in the privacy position or press the privacy button. Then use the Display Dead Bolt/Privacy Status Keycard. You should see the delimiter, followed by one red flash, followed by the delimiter.
2. Release the dead bolt or privacy button by turning the inside handle. Use the Display Keycard again. This time the delimiter should flash twice. A red flash should not appear.

If the proper lights do not appear during both tests, the dead bolt/thumbturn spindle, cam or thumbturn is improperly installed or the dead bolt/privacy switch is not working properly.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
DEAD BOLT SWITCH STATE (0-1)			X
(0 = Not Turned, 1 = Turned)			
Delimiter	-	-	-

## 6.4 Display Keycards (continued)

### Display Motor Switches and Intended Latch State

This Display Keycard indicates whether or not the lock is programmed for a motor. It also displays the current status of the motor's switches and whether the lock should be latched or unlatched. Note: The SAFLOK MT and SL2500 locks have motors. The Select lock, Elevator (ECU) and Remote (RCU) Control Units have no motor.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
HARDWARE MODE PROGRAMMING (0 = No Motor, 1 = Motor)			X
Delimiter	-	-	-
MOTOR SWITCH STATUS (0-3)			X
Delimiter	-	-	-
INTENDED LATCH STATE (0 = Unlatch, 1 = Latch)			X
Delimiter	-	-	-

If the Hardware Mode Programming indicates a single red flash, the lock has been programmed for a motor. If no flash appears, the lock has no motor. If the proper lights do not appear, the lock is improperly programmed. You will need a new STARTER 2 Keycard to correct the problem. If the lock was programmed with an LPI, the lock and key design are wrong for the lock type. The lock must be reprogrammed with the proper STARTER 2 Keycard, or the computer design must be corrected and the LPI used again.

If the lock has a motor (SAFLOK MT and SL2500), the Motor Switch Status will indicate on of the following:

Motor Switch Status – Lock With Motor

- 0 = Problem
- 1 = OK (Unlatched)
- 2 = OK (Latched)
- 3 = Problem

If the lock has no motor (Select, ECU or RCU), the Motor Switch Status will indicate on of the following:

Motor Switch Status – Lock With No Motor

- 0 = OK (Latched)
- 1 = Problem
- 2 = Problem
- 3 = Problem

If the problem lights appear, the lock's harness is improperly connected to the circuit board, or for locks with motors, the motor is jammed or the motor switches are not working properly. Refer to the Troubleshooting Section of the Lock Installation Manual for instructions to gain entry to a closed door.

If the intended Latch indicates no red flashes, the lock is supposed to be unlatched. If it indicates one red flash, the lock is supposed to be latched.

## 6.4 Display Keycards (continued)

### Low Battery Status

This Display Keycard tests for low battery indication and condition. If the lock's batteries are low and a normal keycard is used, the red light will flash ALTERNATELY with the normal green or yellow lights. After the batteries are changed, this light pattern will continue until the lock has been opened once, or an ECU/RCU relay has been activated once. The next time a keycard is used, the low battery indicator lights should not appear.

	100's <b>G</b>	10's <b>Y</b>	1's <b>R</b>
Delimiter	-	-	-
LOW BATTERY FLAG (0 = OK, 1 = LOW)			X
Delimiter	-	-	-
LOW BATTERY INPUT (0 = OK, 1 = LOW)			X
Delimiter	-	-	-

The Low Battery Flag indicates whether the low battery condition occurred recently.

The Low Battery input indicates whether the lock batteries are currently low.

If the Low Battery Flag indicates one red flash, and the Low Battery input indicates no red flash, the batteries were recently low, but are no longer low. Use a Master Level Keycard to get green and red flashing lights. Then, try the Display Keycard again.

If the Low Battery Input Flag indicates one red flash, the batteries are beginning to get low and should be replaced.

If no red lights occur with the Low Battery Flag or Low Battery Input, the batteries are fine.

### Clock Run Test

This Display Keycard will indicate whether or not the lock's clock is working.

	100's <b>G</b>	10's <b>Y</b>	1's <b>R</b>
Delimiter	-	-	-
INDICATES PROCESS IS RUNNING (Steady Yellow Light) (1-64 Sec.)			X
Delimiter	-	-	-
CLOCK WORKING STATUS (0-1)			X
Delimiter	-	-	-

If the Clock Working Status does not indicate one red flash, the lock's clock is not working and the circuit board should be replaced.

## 6.4 Display Keycards (continued)

### LED Lights Test

This Display Keycard is used to indicate whether or not all of the LED's are working properly.

	100's	10's	1's
	<b>G</b>	<b>Y</b>	<b>R</b>
Delimiter	-	-	-
DISPLAY 111	X	X	X
Delimiter	-	-	-

If Display 111 causes the green, yellow and red lights to flash, the LED's are working properly. If any or all of the lights do not flash, the circuit board should be replaced.

## 6.5 Using Program Status Keycards

Program Status Change keycards are used to make changes in the lock's status. To effect these changes, the Program Status Change keycards must be programmed into the lock with a Primary Program keycard (PPK).

The program changes that can be made with the Program Status Change keycards include:

1. LED Diagnostics Keycard – Used to turn on LED Diagnostics to determine why a keycard is not working in a lock. Refer to Section 6 for instructions on using the LED Diagnostics.
2. E2 Disable/Enable Keycard – Used to disable or enable the E2 area of the lock circuit board. A lock can only be disabled if it is working properly. When the E2 is disabled, no keycards will operate the lock, the lock cannot be re-programmed until the E2 is enabled. All keycards will cause the lock to display Mode 4 lights (two red flashes, then all lights flash 4 times) to indicate that the lock is disabled.

### *To Disable a Lock's E2:*

- A. Use the PPK to obtain a slow flashing yellow light. The PPK must have authorization.
- B. While the yellow light is flashing, use the E2 Disable/Enable key. You should see two flashes of green and yellow lights, then a red flash.
- C. If the proper lights do not appear, the E2 has not been disabled. In most cases, you will see two yellow and red flashes because the PPK did not have authorization.

### *To Enable a Lock's E2:*

- A. Use the PPK to get Mode 4 lights, followed by a slow flashing yellow light. The PPK must have authorization.
  - B. While the yellow light is flashing, use the E2 Disable/Enable key. You should see two flashes of the green and yellow lights, followed by a green flash.
  - C. If the proper lights do not appear, the E2 has not been enabled. In most cases, you will see two yellow and red flashes because the PPK did not have authorization.
3. E2 Erase Keycard – Used to erase all of the information in the lock. When a lock is erased, all of the programming and interrogation information will be lost. The lock will then be initialized (Mode 1) and ready for programming again. A lock cannot be erased if the E2 is disabled (Mode 4). Refer to the Lock Installation Manual for additional details on using the E2 Erase Keycard.

### *To Erase a Lock:*

- A. Use the PPK key to get a slow flashing yellow light. The PPK key must have authorization. If the lock is not working properly, you may see Mode 3 lights before the flashing yellow light.
- B. While the yellow light is flashing, use the E2 Erase Keycard. The green and yellow lights will flash two times, followed by a yellow flash.

## 6.5 Using program status keycards (continued)

- C. If the proper lights do not appear, the E2 has not been erased. In most cases you will see two yellow and red flashes because the PPK key used did not have authorization.

Once a lock is erased, it will be in Mode 1, and any keys used will display Mode 1 lights (2 flashes of the green light, then all lights flash four times) until the lock is programmed.

- 4. Battery Disconnect Keycard – Used to ensure that the lock's memory will not be corrupted if the batteries are disconnected and an ELPS is not used to maintain power.

Refer to the Lock Installation Manual for instructions on using the Battery Disconnect Keycard and the changing of the lock's batteries.

## 6.6 Using LED Diagnostics

Diagnostics Error Codes will appear when using LED Diagnostics, LPI Programming and Last Key Used Diagnostics.

### LED Diagnostics

If a keycard does not work in a lock, you can use LED Diagnostics to display an error code that will indicate the reason the keycard did not work. To use LED Diagnostics, you must have the following keycards:

- A PPK or SPK Keycard
- An LED Diagnostic Keycard
- The keycard that did not work in the lock

1. To turn LED diagnostics on use the PPK or SPK in the lock. A slow flashing yellow light will appear.
2. While the yellow light is flashing, use the LED Diagnostics Keycard. The green and yellow lights will flash three times.
3. Use the keycard that did not work in the lock. The delimiter (green, yellow and red lights flash one time simultaneously) will flash to indicate the beginning of the error code display. These lights are followed by a light code consisting of flashing green, yellow and red lights.
  - 1) Count the number of times the green light flashes (0-2).
  - 2) Count the number of times the yellow light flashes (0-9).
  - 3) Count the number of times the red light flashes (0-9).

Each flash of the green light has a value of 100. If, for example, the green light flashes once, the value is 100 ( $100 \times 1 = 100$ ). Each flash of the yellow light has a value of 10. If, for example, the yellow light flashes five times, the value is 50 ( $10 \times 5 = 50$ ). Each flash of the red light has a value of 1. If, for example, the red light flashes four times, the value is 4 ( $1 \times 4 = 4$ ). In this example, the error code is 154.
4. After the green, yellow and red lights cease to flash, the delimiter (all lights flash simultaneously) will flash one time to indicate the end of the error code display.
5. To turn LED Diagnostics off, use the LED Diagnostics Keycard in the lock. If you do not use the LED Diagnostics Keycard, LED Diagnostics will automatically be turned off after two minutes.
6. Refer to the following Diagnostics Error Codes for a description of the problem. Contact SAFLOK if you need assistance in correcting the problem.

In our example, the error code was 154. This error code means that the key is an opening key, but the lock is dead bolted and the key cannot override the dead bolt.

**\*\*See Pages 20 – 34 for all Lock LED diagnostic codes and definitions\*\***

## 6.7 Types of Keycards

### Primary and Secondary Program Keycards (PPK/SPK)

The Primary Program keycard (PPK) is a non-opening keycard that is used in conjunction with Secondary program keycards (SPK), Program Information keycards (PI), and Program Status keycards (PS) for performing the following functions:

- 1) Use with PI Basic keycard to program lock/room number and miscellaneous information.
- 2) Use with PI Clock keycards to program the lock's clock.
- 3) Use with PI DST keycards to program Daylight Savings Time information.
- 4) Use with PI Autolatch keycards to disable and re-enable autolatch/unlatch, or to program the lock with autolatch and unlatch times.
- 5) Use with PS LED Diagnostics keycard to turn on LED Diagnostics.
- 6) Use with PS E2 Disable/Enable keycard to disable/enable a lock.
- 7) Use with PS E2 Erase keycard to erase a lock.
- 8) Reprogram an out of sequence SPK into locks.
- 9) Remaster a different SPK into locks.
- 10) Use with PI and Pass Mastering keycards to change how pass keycards work, to reprogram a lock for a keycard if Resequencing keycards don't work, or to add or delete a keycard to the lock. Also used with a Standard Type keycard to open a lock with a hardware problem.
- 11) Use with PI Level Program keycards to change how keycards work in a lock.
- 12) Use with PS Battery Disconnect keycards to disconnect battery power without the use of an ELPS.

You can generate PPKs from the Make User Keys function box under the Keys tab. When you run this transaction, you will be asked to indicate which functions the keycard will be authorized to perform. PPK's are normally provided to persons involved in programming and troubleshooting locks.

The SPK is used to reprogram the current PPK or remaster a different PPK into a lock. To generate a Secondary Program keycard, go to the Make User Keys function box under the Keys tab. SPKs should only be made at the time they are needed.

## 6.7 Types of Keycards (continued)

### Program Information Keycards (PI)

Program Information keycards are used to program all of the lock information, including lock name, date and time, DST, autolatch, level programming, key mastering, etc. These keycards must be used with a PPK.

### Program Status Change Keycards (PS)

Program Status Change keycards are used to change the status of a lock. They include the LED Diagnostics keycard, the E2 Erase keycard, the E2 Disable/ Enable keycard and the Battery Disconnect keycard. The Status keycards must be used with a Primary Program keycard (or Secondary Program keycard if the PPK is not available.)

### Standard Keycards

Standard keycards allow changes to a Standard Keycard that is already stored in the lock's memory. They include the Resequenece Keycard, the Inhibit-A-keycard and the Uninhibit-A keycard. The Resequenece keycard is used to bring the lock's current keycard sequence information into agreement with the computer's keycard sequence information for that keycard. The Inhibit-A-keycard and the Uninhibit-A-keycard affect only the Standard Keycard they were made to effect.

### Display Keycards

Display keycards enable you to display the following lock information by way of the LED's:

1. EPROM Version (Lock's Program Version)
2. Clock Time
3. Clock Date
4. Autolatch Status
5. Last Two LPI Records
6. Knob Turn Switch
7. Dead Bolt Switch Status
8. Motor Switch Status
9. Low Battery Life
10. Clock Run Test
11. LED Lights Test

### Starter Keycards

Starter Keycards are provided at the time of installation and consist of ten keycards that can be used in lieu of the LPI Terminal to program a lock so that it will accept Installer's or New Construction keycards. The lock will later need to be programmed by way of the LPI before it will accept keys made from the property's computer.

## 6.8 Diagnostics Error Codes

### LPI Programming Errors

If an error occurs when a lock is being programmed, the LPI Terminal will display the following screen indicating an error code on the Error Line:

\* \* \* LPI ERROR XXX \* \* \*

Error Occurred When Sending Key Level xx, Type yy, xxxxxxxxxxxx

LOCK AND PROBE COMMUNICATIONS HAVE BEEN TERMINATED

(PRESS Any Key)

The code number indicated on the Error Line is the same as that used by LED Diagnostics and you can refer to the codes in this section for information about the problem. For LPI Programming errors, you will need to contact SAFLOK for assistance, and your SAFLOK representative will need this error code information.

### Most Common Diagnostics Error Codes

The following error codes are most likely to appear when performing LED Diagnostics:

Code	Description
<b>113</b>	All Keys: The key is not valid in the current lock mode or cycle. If LED Diagnostics is on, turn off. Lock is typically in an invalid mode. Refer to Section 3, Invalid Mode Indicators for additional information. This code may also appear if you use Standard or Display keys when the PPK or SPK LEDs are flashing.
<b>117</b>	Standard, Special, PPK and SPK Keys: the lock is in shutdown cycle because 10 or more invalid keys were used. A valid key must be used to terminate shutdown mode.
<b>122</b>	Standard Keys: Lock is non-operating for this key type. The key does not belong to this lock.
<b>123</b>	Standard and Special Keys: Key is not mastered into the lock. The key does not belong to this lock.
<b>127</b>	Standard Keys: Key does not have one of the 12 valid Pass numbers required for the Pass function.
<b>128</b>	Standard and Special Keys: Key is an old key; its new key date is earlier than the lock's key data. Replace the key with a current or new key.
<b>129</b>	Standard and Special Keys: Key is an old key; its new key time is earlier than the lock's key data. Replace the key with a current or new key.
<b>134</b>	Standard and Special Keys: Key is an old key: Key type has limited sequence range (1-15) but key's sequence number is older than the lock's key data. Replace key with a current or new key. Use a re-sequence key if necessary.

- 135**            Standard and Special Keys: Key is too new; key type has limited sequence range and key's sequence number is beyond the lock's key data and range. Make and use a re-sequence key, then try the original key again.
  
- 136**            Standard Key: Key is a Limited Use Key and has already been used the maximum number of times. Replace key with a new key.
  
- 137**            Standard Key: The key is a new key but the door is dead bolted and the new key cannot be accepted. If key is for a new guest, the room is still occupied. Assign new guest to another room.
  
- 141**            All Keys: The key is expired based on the lock's clock date and time. Replace key with a duplicate key with a later expiration date and time.
  
- 145**            Standard and PPK Keys: the shift key is not valid at this time of day.
  
- 149**            Standard Key: Key is current but key's level is inhibited. Replace key with a new key.
  
- 150**            Standard Key: Key is current but key is inhibited. Replace with a new key.
  
- 152**            Standard Key: Key is electronically locked out. Use the electronic unlock key to remove the electronic lockout.
  
- 154**            Standard Key: Key is an opening key but the lock is dead bolted or has privacy switch set and the key cannot override it.
  
- 176**            PPK and SPK Keys: None of the key's 3 combinations matched the lock's current combination. The key is either too old or too many keys were made and never used. If the key is a current Key, it must be reprogrammed into the lock using a valid SPK or PPK key.
  
- 178**            Standard Key: the key is new and is identified as a pre-reg key which will not work until its check-in date and time. If desired, replace key with a new key.
  
- 187**            Status Key: In a programming cycle the Status Key was used after PI keys, but it must be the first and only key used after the program cycle begins. To program in a Status Key, use the PPK or SPK key followed by the Status Key.

## 6.8 COMPLETE LIST OF DIAGNOSTIC ERROR CODES

The following is a complete listing of the error codes that apply to LED Diagnostics, LPI Programming errors and Last Key Used Diagnostics.

### In Process Errors

Code	Description
001	An E2 write error occurred while processing the key; lock is in override mode 3. Contact SAFLOK for assistance.
002	A double E2 write error occurred while processing the key; lock is in fatal test mode. Contact SAFLOK for assistance.
003	The E2 would not respond while processing the key, lock is in fatal test mode. Contact SAFLOK for assistance.
004	The key has a checksum error – improperly encoded. Contact SAFLOK for assistance.
006	The lock is in override mode 3 and could not log the key use. Contact SAFLOK for assistance.

### Shared PI Key Errors in Program Cycle

Code	Description
016	PI Key: Key has no program capability bits set – doesn't do anything. Contact SAFLOK for assistance.
017	PI Key: Not enough E2 memory left to add key or level data. Contact SAFLOK for assistance.

### PI Pass Master Errors in Program Cycle

Code	Description
018	PI Pass Master: Lock level operation must pass to accept PI pass master key. Contact SAFLOK for assistance.
019	PI Pass Master: Key pass time criteria must be programmed in, if level is not pass mastering. Contact SAFLOK for assistance.
020	PI Pass Master: Time criteria equals 3 is invalid. Contact SAFLOK for assistance.
021	PI Pass Master: If PI key's time equals 0, cannot program operating time range. Contact SAFLOK for assistance.
022	PI Pass Master: The PI key and lock must have the same operational time criteria if the PI key will only add/change the pass operational times. Contact SAFLOK for assistance.
023	PI Pass Master & PI Autolatch: Autolatch or pass operational times contain invalid field (hours, minutes) values. Contact SAFLOK for assistance.

- 024** PI Pass Master: In order to change the valid pass numbers, the pass criteria must also be programmed in. Contact SAFLOK for assistance.
- 025** PI Pass Master: If the key's pass criteria equals 0, all the pass numbers must equal 0. Contact SAFLOK for assistance.
- 026** PI Pass Master: If the key's pass criteria equals 1, all the pass numbers cannot equal 0. Contact SAFLOK for assistance.

#### **PI Level Program Errors in Program Cycle**

- | <b>Code</b> | <b>Description</b>   |
|-------------|--|
| <b>027</b>  | PI Level Program: If PI key's current program group number does not equal 0, then it must equal the key type's program group number. Contact SAFLOK for assistance.                          |
| <b>028</b>  | PI Level Program: If the key type's program group equals 0 (non-operating), the PI key must program in the operation. Contact SAFLOK for assistance.   |
| <b>029</b>  | PI Level Program: PI key cannot program in the function without programming in the sub-function and additional function information. Contact SAFLOK for assistance.                          |
| <b>030</b>  | PI Level Program: PI key function greater than 5 is invalid or PI key is not programming in the function and its function does not equal key type's function. Contact SAFLOK for assistance. |
| <b>031</b>  | PI Level Program: PI key has invalid value for the sub-function or additional function based on the key's function value. Contact SAFLOK for assistance.                                     |

#### **PI Key Master Errors in Program Cycle**

- | <b>Code</b> | <b>Description</b>  |
|-------------|---|
| <b>032</b>  | PI Key Master: Add/Change/Delete – The PI key is for a key level with operation equals 0 (non-operating) or equals 7 (pass) which doesn't have individual keys. Contact SAFLOK for assistance.        |
| <b>033</b>  | PI Key Master: Add/Change/Delete – The PI key's New Key Date/Time fields have invalid values. Contact SAFLOK for assistance.  |
| <b>034</b>  | PI Key Master: Change/Delete – The PI key record number is not in the lock so it cannot change/delete the key. Contact SAFLOK for assistance.   |
| <b>035</b>  | PI Key Master: Change/Delete – The PI key is not programming or overriding the key's New Date and the key's New Date doesn't match the lock's key data. Contact SAFLOK for assistance.                |
| <b>036</b>  | PI Key Master: Add – The PI key's record number is already in the lock level so it cannot be added. Contact SAFLOK for assistance.  |
| <b>037</b>  | PI Key Master: Add/Change – The level has a batch operation and the PI key cannot add/change a Sequence Number greater than 32. Contact SAFLOK for assistance.  |
| <b>038</b>  | PI Key Master: Change/Delete – The PI key is not programming or overriding the key's Sequence Number and the key's Sequence Number does not match the lock's key data. Contact SAFLOK for assistance. |

- 039** PI Key Master: Change/Delete – The PI key is not programming or overriding the key's combination and the key's combination does not match the lock's key data. Contact SAFLOK for assistance.
- 040** PI Key Master: Change/Delete – The level has a batch operation and the PI key cannot change the key Sequence Number. Contact SAFLOK for assistance.
- 041** PI Key Master: Add/Change – The PI key cannot add/change if the key Combination equals 0. Contact SAFLOK for assistance.

#### **PI Autolatch Errors in Program Cycle**

<b>Code</b>	<b>Description</b>
<b>042</b>	PI Autolatch: The lock already has the maximum 16 records; all autolatch records have been deleted. Contact SAFLOK for assistance.
<b>043</b>	PI Autolatch: The lock's E2 does not have enough room to add the PI key's record(s) because the minimum LPI records would have been replaced, all autolatch records have been deleted. Contact SAFLOK for assistance.
<b>044</b>	PI Autolatch: The lock is not programmed for motor switches (solenoid) and cannot be left in an unlatched state so autolatch/unlatch is not allowed. Contact SAFLOK for assistance.
<b>045</b>	PI Autolatch: PI key tried to program autolatch record out of chronological order or the PI key's hour values are invalid, all autolatch records have been deleted. Contact SAFLOK for assistance.
<b>046</b>	PI Autolatch: PI key tried to program autolatch record for specific days of week when previous autolatch records were for common times applying to all days of the week or vice-versa – cannot mix common and specific day of week records, all autolatch records have been deleted. Contact SAFLOK for assistance.
<b>047</b>	PI Autolatch: PI key tried to program another autolatch record in when the last record already rolled over to the next week, all autolatch records have been deleted. Contact SAFLOK for assistance.

**PI Clock (& PI Number) Errors in Program Cycle**

<b>Code</b>	<b>Description</b>
<b>050</b>	PI Clock: The lock's DST information is not programmed in and must be before a PI Clock key can be used. Contact SAFLOK for assistance.
<b>051</b>	PI Clock: The lock's batteries are low and must be changed before a PI Clock key can be used (Clock time is lost if batteries are disconnected). Contact SAFLOK for assistance.
<b>052</b>	PI Clock: PI key cannot indicate the clock reset interval, months will be programmed in using PI Number/Time keys. Contact SAFLOK for assistance.
<b>053</b>	PI Clock: PI key must program both date (months, date, year) and time (hours, minutes, seconds) together – one or the other is not allowed. Contact SAFLOK for assistance.
<b>054</b>	PI Clock: If programming in date and time, PI key must indicate the month, date, hours and minutes – data is either all on the PI key or will all come from PI Number/Time keys. Contact SAFLOK for assistance.
<b>055</b>	PI Clock: PI key cannot indicate the clock year – will be programmed in using PI Number/Time keys. Contact SAFLOK for assistance.
<b>056</b>	PI Clock: PI key cannot indicate the clock seconds – will be programmed in using PI Number/Time keys. Contact SAFLOK for assistance.
<b>057</b>	PI Clock: If DST observance is non-standard, the PI Clock key's year must equal the DST change dates/year value. Contact SAFLOK for assistance.
<b>058</b>	PI Clock & PI Number/Time: The month value is invalid (1-12 only). Contact SAFLOK for assistance.
<b>059</b>	PI Clock & PI Number/Time: The date value is invalid (1-31 only and also maximum based on the month provided & Leap Years). Contact SAFLOK for assistance.
<b>060</b>	PI Clock & PI Number/Time: The hour value is invalid (0-11 only, noon equals 0). Invalid Key Field Values (type, function data, etc.). Contact SAFLOK for assistance.
<b>061</b>	PI Clock & PI Number/Time: The minute's value is invalid (0-59 only). Invalid Key Field Values (type, function, data, etc.). Contact SAFLOK for assistance.
<b>062</b>	PI Clock & PI Number/Time: The second's value is invalid (0-59 only). Invalid Key Field Values (type, function, data, etc.). Contact SAFLOK for assistance.

**PI Number/Time Errors in Program Cycle**

<b>Code</b>	<b>Description</b>
<b>063</b>	PI Number/Time: The lock wasn't expecting PI Number/Time key to be used because a PI clock key indicating PI Number/Time key was not just used. Contact SAFLOK for assistance.
<b>064</b>	PI Number/Time: The lock was expecting a PI Time key (AM/PM), but PI key is a Number key (0-9). Contact SAFLOK for assistance.
<b>065</b>	PI Number/Time: The lock was expecting a PI Number key (0-9), but PI key is a Time key (AM/PM). Contact SAFLOK for assistance.
<b>066</b>	PI Number/Time: The PI key has invalid values. Contact SAFLOK for assistance.

**General E2 Errors That Should Not Occur**

<b>Code</b>	<b>Description</b>
<b>103</b>	EPROM Program Problem: Overflow from 16/8 divide, replace circuit board immediately.
<b>105</b>	E2 Corrupted: An invalid value exists in the E2, replace circuit board immediately.

**General Key Validation Errors**

<b>Code</b>	<b>Description</b>
<b>112</b>	All Keys: The key has invalid type values based on its level. Contact SAFLOK for assistance.
<b>113</b>	All Keys: The key is not valid in the current lock mode or cycle. If LED diagnostics is on, turn off. Lock is typically in an invalid mode. Refer to Section 3, Invalid Lock Mode Indicators. Can also occur if you use Standard or Display keys when the PPK or SPK LEDs are flashing. Contact SAFLOK for assistance.
<b>114</b>	All Keys: The lock's property number indicates factory programming; key's property number indicates that it is a true property key. You must use Installers/NC keys or reprogram the lock.
<b>115</b>	All Keys: The lock's property number indicates property programming; key's property number indicates that it is a factory key. You must use keys generated by your computer.
<b>116</b>	All Keys: The lock's property number doesn't match the key's property number. Key is not for this property.
<b>117</b>	Standard, Special, PPK and SPK Keys: The lock is in shutdown cycle because 10 or more invalid keys were used. A valid key must be used to terminate shutdown mode.
<b>118</b>	Standard, Special, PPK and SPK Keys: The key's record number equals 0 (invalid). Contact SAFLOK for assistance.
<b>119</b>	Standard, Special, PPK and SPK Keys: The key's combination equals 0 (invalid). Contact SAFLOK for assistance.

**PI Basic Errors in Program Cycle continued**

<b>Code</b>	<b>Description</b>
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<b>120</b>	All Keys: Expiration Date and Time or New key Date and Time contain invalid values for month, date, hours or minutes (example: 25:00, 4/31, etc.). Contact SAFLOK for assistance.
<b>121</b>	Standard, Special, PPK and SPK Keys: Key's ID number equals 0 (invalid). Contact SAFLOK for assistance.
<b>122</b>	Standard Keys: Lock level is non-operating for this key's type. The key does not belong to this lock.
<b>123</b>	Standard and Special Keys: Key is not mastered into the lock. The key does not belong to this lock.
<b>124</b>	Standard Keys: The lock level is Pass, but Pass Mastering key has not been programmed in yet so key cannot be verified. Contact SAFLOK for assistance.
<b>125</b>	Standard Keys: Lock was in a dual key cycle awaiting another dual key, but this key does not belong to a level with a dual key function. You must use another dual key after using the first dual key.
<b>126</b>	Standard Keys: Lock is in Override Mode 3 and the PPK key used prior to this key did not have the authorization to work with a Standard key. You must use a PPK key with proper authorization.
<b>127</b>	Standard Keys: Key does not have one of the 12 valid pass numbers required for the pass level.
<b>128</b>	Standard and Special Keys: Key is an old key; its new key date is earlier than the lock's key data. Replace the key with a current or new key.
<b>129</b>	Standard and Special Keys: Key is an old key; its new key time is earlier than the lock's key data. Replace the key with a current or new key.
<b>130</b>	Standard Keys: Key is an invalid key, lock level is batch and the key's sequence number is invalid (not equal to 1-32). Contact SAFLOK for assistance.
<b>131</b>	Standard Keys: Key is an old key, lock level is batch and the key's sequence number has already been used. Replace key with an unused sequence.
<b>132</b>	Special Keys: key is an old key, its new key date and time is earlier than the lock's key data. Replace key with a current or new key.
<b>133</b>	Standard and Special Keys: Key is an old key, level has unlimited sequence range but key's sequence number is older than the lock's key data. Replace key with a current or new key. Use a re-sequence key if necessary.
<b>134</b>	Standard and Special Keys: Key is an old key, level has limited sequence range (1-15) but key's sequence number is older than the lock's key data. Replace key with a current or new key. Use a re-sequence key if necessary.

**PI Basic Errors in Program Cycle continued**

<b>Code</b>	<b>Description</b>
-------------	--------------------

<b>135</b>	Standard and Special Keys: Key is too new, level has limited sequence range and key's sequence number is beyond the lock's key data and range. Make and use a re-sequence key, then try the original key again.
<b>136</b>	Standard Key: Key is a limited use key and has already been used the maximum number of times. Replace key with a new key.
<b>137</b>	Standard Key: The key is a new key but the door is dead bolted and the new key cannot be accepted. If key is for a new guest, the room is still occupied. Assign new guest to another room.
<b>138</b>	Standard Key: The key is a new key and cannot be accepted since the lock is in Mode 3 Override. Use the current key from another master level instead.
<b>139</b>	Standard Key: The key's expiration can't be validated because the lock's clock date needs resetting. Reset the lock's clock. See Section 3.
<b>140</b>	Standard and Special Keys: The key's expiration can't be validated because the lock's clock time needs resetting. Reset the lock's clock. See Section 5.
<b>141</b>	All Keys: The key is expired based on the lock's clock date and time. Replace key with a duplicate key with a later expiration date and time.
<b>142</b>	Standard, Special & PPK Keys: The key is invalid on this day of week or the lock level is non-operating on this day of week.
<b>143</b>	Standard, Special & PPK Keys: The lock cannot determine if the level should operate or the key is valid on this day of the week because the lock's clock date needs resetting. Reset the lock's clock. See Section 5.
<b>144</b>	Standard and PPK Keys: The lock cannot determine if the shift key is valid at this time because the lock's clock time needs resetting. Reset the lock's clock. See Section 5.
<b>145</b>	Standard and PPK Keys: The shift key is not valid at this time of day.
<b>146</b>	Standard Key: The lock's level is pass, but it only operates during certain hours of the day and the lock cannot determine if the level should operate at this time because the lock's clock time needs resetting. Reset the lock's clock. See Section 5.
<b>147</b>	Standard Key: The lock's level is pass and its operational times vary by day of week but the lock cannot determine when the level should operate because the lock's clock date needs resetting. Reset the lock's clock. See Section 5.
<b>148</b>	Standard Key: The lock's level is pass but it only operates during certain hours of the day and does not operate at this time of day.
<b>149</b>	Standard Key: Key is current but key's level is inhibited. Replace key with a new key.

**PI Basic Errors in Program Cycle continued**

<b>Code</b>	<b>Description</b>
<b>150</b>	Special Key: Key is current but key is inhibited. Replace key with a new key.
<b>151</b>	Standard Key: Key is an old key – lock level is batch and key's sequence number has already been used. Replace key with an unused sequence.
<b>152</b>	Standard Key: Key's level is electronically locked out. If this key is a dual, electronic lock/unlock, inhibit level, or unlatch/latch key; it will not perform its function. The electronic unlock key must be used to remove the electronic lockout.
<b>153</b>	Standard Key: Key is non-opening and lock is in Mode 3 Override. Use an opening key or a different master level key.
<b>154</b>	Standard Key: Key is an opening key, but the lock is dead bolted and the key cannot override it.
<b>155</b>	Standard Key: Lock was in Dual key cycle and the same dual key was used twice in a row. Use a different dual key after using the first dual key.
<b>156</b>	Standard Key: Lock was in Dual key cycle and both dual keys were non-control (non-opening) keys. Use at least one control (opening) dual key.
<b>157</b>	Standard Key: Opening key, low battery lockout. Lock level for this key is locked out when a low battery condition exists; this key did not perform any special function and was not allowed to open the door. Use another master level key to open the door and replace the batteries.
<b>158</b>	Standard Key: Opening key, low battery lockout. Lock level for this key is locked out when a low battery condition exists. This key did perform a special function (inhibit levels or electronic lock) but was not allowed to open the door. Use another master level key to open the door and replace the batteries.
<b>159</b>	Standard Key: Opening key, clock reset lockout. Lock level for this key is locked out when the lock's clock needs resetting. This key did not perform any special function and was not allowed to open the door. Use another master key to open the door and reset the lock's clock.
<b>160</b>	Standard Key: Opening key, clock reset lockout. Lock level for this key is locked out when the lock's clock needs resetting; this key did perform a special function (inhibit levels or electronic lock) but was not allowed to open the door. Use another master key to open the door and reset the lock's clock.
<b>161</b>	Standard Key: Opening key, low battery hassle. Lock level for this key is hassled when a low battery condition exists; this key did not perform any special function and was not allow to open the door. Use the key again to open the door. Replace the batteries.
<b>162</b>	Standard Key: Opening key, low battery hassle. Lock level for this key is hassled when a low battery condition exists; this key did perform a special function (inhibit levels or electronic lock) but was not allowed to open the door. Use the key again to open the door and replace the batteries.

**PI Basic Errors in Program Cycle continued**

<b>Code</b>	<b>Description</b>
<b>163</b>	Standard Key: Opening key, clock reset hassle. Lock level for this key is hassled when the lock's clock needs resetting, this key did not performance special function and was not allowed to open the door. Use the key again to open the door. Reset the lock's clock to clear the problem.
<b>164</b>	Standard Key: Opening key, clock reset hassle. Lock level for this key is hassled when the lock's clock needs resetting. This key did perform a special function (inhibit levels or electronic lock) but was not allowed to open the door. Use the key again to open the door. Reset the lock's clock to clear the problem.
<b>165</b>	Special Key: Key's main function equals 3 (invalid). Contact SAFLOK for assistance.
<b>166</b>	Special Key: Re-sequence, Inhibit or Uninhibit a key. Lock level is non-operating for this key's level. Key does not belong to this lock.
<b>167</b>	Special Key: Re-sequence, Inhibit or Uninhibit a key. Lock level is batch operation. Special keys are not allowed. Replace key with an unused sequence.
<b>168</b>	Special Key: Uninhibit a key. Lock level's operation indicates intra level auto inhibiting with new keys. Uninhibiting a key is not allowed. Replace key with a new key.
<b>169</b>	Special Key: Uninhibit a key. Lock level's function indicates inter level auto inhibiting with new keys. Uninhibiting a key is not allowed. Replace key with a new key.
<b>170</b>	Special Key: Re-sequence a key. Key is valid but did not do anything. Lock was already in sequence with computer's current key.
<b>171</b>	Special Key: Inhibit a key. Key is valid but did not do anything. Lock was already in sequence with computer's current key and key was inhibited.
<b>172</b>	Special Key: Uninhibit a key. Key is newer than the key information stored in the lock's memory. It is not necessary or possible to uninhibit a key which has not been used yet.
<b>173</b>	Special Key: Uninhibit a key. Lock level's programming indicates that the level is inhibited (all keys are inhibited) and there are other keys on this level. Can't uninhibit the key until the level is uninhibited. To uninhibit a key, make and use a new standard level key.
<b>174</b>	Special Key: Uninhibit a key. Key's valid but did not do anything. Lock was already in sequence with computer's current key and key was not inhibited.
<b>175</b>	PPK and SPK Key: When used in a programming cycle, it indicates that the key is not mastered into the lock and the PPK or SPK key used to start the program cycle was not authorized to remaster the key. When used in other than a program cycle, it indicates that the key is not mastered into the lock. The key does not belong to this lock.
<b>176</b>	PPK and SPK Keys: None of the key's 3 combinations matched the lock's current combination. The key is either too old or too many new keys were made and never used. If key is a current key, it must be reprogrammed into the lock using a valid SPK or PPK.

## PI Basic Errors in Program Cycle continued

Code	Description
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<b>177</b>	PI Keys: The PPK or SPK key used to start the program cycle was not authorized to program this PI key into the lock. Use a PPK or SPK with the proper authorization. Refer to Section 5.
<b>178</b>	Standard Key: The key is new and is identified as a pre-reg key which will not work until its check-in date and time. If desired, replace key with a new key.
<b>179</b>	Display Key: Key has an invalid function (greater than 3). Contact SAFLOK for assistance.
<b>180</b>	LPI Request: Key appears to be an LPI request but lock is not in LPI mode. Contact SAFLOK for assistance.
<b>181</b>	LPI Request: Key has an invalid LPI function (not equal to 0-7 or 128-131). Contact SAFLOK for assistance.
<b>182</b>	PI Basic: PI key must program in the hardware and communication mode when the lock is in Mode 1 Formatted and Unprogrammed. Contact SAFLOK for assistance.
<b>183</b>	Standard Key: When the lock is in the LPI mode, the lock will not allow the door to be opened (opening key) unless the lock's batteries are low, the lock is in Mode 3 Override or the lock is in Mode 5 Critical Locking Problem. Contact SAFLOK for assistance.
<b>184</b>	PPK Key: The key is new but the lock is in Mode 4 E2 Disabled and new keys are not accepted. Contact SAFLOK for assistance.
<b>185</b>	Display Key: When the lock is in the LPI mode, the lock will not accept Display keys since the LPI cannot read them. Contact SAFLOK for assistance.
<b>186</b>	Standard Key: The key is accepted, but is non-opening and will not open the door.
<b>187</b>	Status Key: In a programming cycle, the Status key was used after PI keys, but it must be the first and only key after the program cycle begins. To program in a Status Key, use the PPK or SPK key followed by the Status key.
<b>188</b>	All Keys: The lock is in Test Mode indicating fatal problem occurred and the lock should be returned to supplier. Only LPI interrogations are allowed. The lock must be drilled to access the room.
<b>189</b>	Standard Key: The key is an opening key but the lock found the hardware switches indicated a motor might be connected even though the lock's hardware mode indicates a solenoid is connected. Opening keys will not be accepted until the lock's hardware mode is programmed to match the switch indications. Contact SAFLOK for assistance
<b>190</b>	Status Key: LED Diagnostics Key. The LED Diagnostics key did not do anything. If you were trying to turn LED Diagnostics on, you must use the PPK key first. If you were trying to turn LED Diagnostics off, no further action is required since LED Diagnostics is already off.

**PI Basic Errors in Program Cycle continued**

<b>Code</b>	<b>Description</b>
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<b>191</b>	PPK Key: The key cannot be a shift type key when the lock is in Mode 1 (Formatted and Unprogrammed). Use a PPK with no shift hours.
<b>192</b>	PPK Key: The key cannot be invalid for any day of week when the lock is in Mode 1 (Formatted and Unprogrammed). Use a PPK with no invalid days.
<b>193</b>	PI Number/Time Key: In the programming cycle, the lock was not expecting a PI Number/Time key since no PI Clock key requiring PI Number/Time Keys were used or because the lock already received all the PI Number/Time keys it needed after the PI Clock key. Use a Display Date and Display Time key to check the lock's date and time. If necessary, reuse clock programming keys.
<b>194</b>	PI Basic: PI key tried to program in the hardware mode to solenoid (no motor switches) when the lock already is programmed with autolatch/unlatch records. If lock truly has no motor switches, autolatch records must first be deleted. Contact SAFLOK for assistance.
<b>195</b>	PI Basic: PI key tried to change the lock's property number from factor (0) to a true property number (greater than 0) or vice-versa. This is not allowed since the lock should first have its E2 erased to eliminate all keys and LPI records. Contact SAFLOK for assistance.
<b>196</b>	PI DST: PI key start dates are greater than DST end dates. Contact SAFLOK for assistance.
<b>197</b>	PI DST: PI key indicated it would only reprogram the DST start and end dates but its DST Observance is less than 2 (observances for which no specified dates apply). Contact SAFLOK for assistance.
<b>198</b>	PI DST: PI key attempted to just change the DST start and end dates but its DST Observance is not equal to the lock's. Contact SAFLOK for assistance.
<b>199</b>	PI DST: PI key attempted to just change the DST start and end dates but the lock's DST Observance has never been programmed in and must also be programmed in by the key. Contact SAFLOK for assistance.
<b>200</b>	No ACK received from Multi Channel Controller (MCC). Contact SAFLOK for assistance.
<b>201</b>	No smart card response (card mute). Contact SAFLOK for assistance.
<b>202</b>	Unsupported smart card type. Contact SAFLOK for assistance.
<b>203</b>	Smartcard read/write error. Re-encode key as a duplicate key and test in lock. Contact SAFLOK for further assistance if needed.
<b>204</b>	Keycard not formatted properly. Interrogate the key and save log records if possible. Re-encode key and test in lock. Contact SAFLOK for further assistance if needed.

**PI Basic Errors in Program Cycle continued**

<b>Code</b>	<b>Description</b>
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<b>205</b>	Unauthorized access error. Re-encode key as a duplicate key and test in lock. Contact SAFLOK for further assistance if needed.
<b>206</b>	Errors generated by smartcard chip. Test the key in another lock to verify the key is not damaged. Contact SAFLOK for further assistance if needed.
<b>212</b>	key is the current sequence (not new) and the key's ID has been canceled. Must issue new duplicate key or new sequence key.
<b>213</b>	The lock does not keep track of canceled IDs for the keys for this level. Contact SAFLOK for further assistance if needed.
<b>214</b>	Cancel key's new key date or Sequence is newer than that in the lock for the key records and the key can be auto-inhibited or its new sequence expiration is based on when the new sequence is first used. (can't accept new key data in this circumstance because new sequence will be inhibited or expired). Contact SAFLOK for further assistance if needed.
<b>215</b>	Key ID is already cancelled: This Cancel-a-key-ID key will not cancel this key. Contact SAFLOK for further assistance if needed.
<b>216</b>	There was not enough space to add the variable key. Contact SAFLOK for further assistance if needed.
<b>217</b>	The interrogation memory card already has an interrogation on it. Save the records stored on the key and re-encode as an interrogation key. Contact SAFLOK for further assistance if needed.
<b>220</b>	This particular change key is already in random list. Contact SAFLOK for further assistance if needed.
<b>221</b>	The requested change key to add is already being used as a variable key. Contact SAFLOK for further assistance if needed.