Pulsetronic®
Electronic Safe Lock

Operating Instructions

The Sargent & Greenleaf Pulsetronic Combination Lock represents a major leap forward in lock technology. Read and follow all of the instructions in this booklet carefully to get the best possible performance from your lock and maintain your warranty.

INTRODUCTION

- The Sargent & Greenleaf Pulsetronic® Electronic Combination Lock is shipped from the factory with a preset code of 1 2 3 4 5 6 #. This code can be used to open the lock and change the code. If the safe maker or your dealer sets a different code, he will advise you of the change. You should set the lock to your own, unique code immediately.

- Each time a button is pressed the keypad emits a "beep." (♪)

- All codes must contain six digits or six letters. Any digit or letter can be used as many times as you wish. For instance, the following codes (while not recommended) can operate the lock: 5 5 5 5 5 5 # OR J J J J J J #

- A code always ends with # to signal the lock that you have finished entering all digits of the code. After you have finished entering your six digit code, the # will blink, indicating that it must be pressed to enter the code.

- If you pause more than 10 seconds between pressing buttons when entering a code, the lock will assume you do not want to continue, and its display will blank out. To open the lock, begin the code entry sequence from the first step.

- If you realize you have pressed an incorrect button when entering a code, press ✱ to clear the last digit entered. To clear the entire code, press and hold the ✱ key for two seconds (until the display blanks). Alternatively, you can simply pause ten seconds or more, and the display will clear.

- The Pulsetronic lock incorporates a penalty lockout feature to safeguard against random or sequential attempts by unauthorized persons to determine your opening code. Penalty lockout systems are integrated into both the keypad and lock body, and they can operate independently.

Note: This lock has been Listed by Underwriters Laboratories for use with the following S&G keypad(s): 2000-1XX

APPLICATION NOTES. . .

The Pulsetronic lock uses a completely new technology to secure your safe. The keypad communicates with the lock using audible sound heard as a series of "knocks." Because the transmission of sound is critical to the operation of the lock, it is important to make sure the safe construction is compatible with Pulsetronic technology. Some safes transmit sound better than others. For instance, heavily insulated safes and very light sheet steel containers typically do not transmit sound clearly. Insulated safes tend to muffle sound, while lightweight containers produce echoes. The only way to be absolutely sure the Pulsetronic is compatible with a particular safe is to mount the lock and check for proper, consistent operation. Upon taking delivery of a Pulsetronic equipped safe or upon completing a retrofit, perform each of the following tests <u>before</u> storing anything in the safe:

1. Perform the *Auto Sensitivity*, *Linking*, and *Opening* procedures **three times** while the **safe door remains open**.

2. Perform the *Auto Sensitivity*, *Linking*, and *Opening* procedures **three times** with the safe door closed, but the **handle in the open position**.

3. Perform the *Auto Sensitivity*, *Linking*, and *Opening* procedures **three times** with the safe door closed and locked, **ensuring that the door can be opened at the end of each of the three tries**.

The Pulsetronic is an Underwriters Laboratories Listed Type 1 lock for use on any safe.

The Pulsetronic lock is warranted to be free of defects in materials and workmanship for a period of one year from date of manufacture. This warranty applies only to the condition of the product at the time it left S&G's factory. Subsequent damage, such as might occur in shipping or installation, is not covered. Likewise, problems associated with improper installation (including application to a safe with marginal sound transmission properties) are not covered by S&G's warranty.

BATTERY REMOVAL AND REPLACEMENT. . .

Initial installation of the factory supplied battery pack (two batteries wired together) is explained in the Pulsetronic installation instructions. A new safe should already have lock batteries installed.

If the batteries must be replaced, you can use the following illustrated procedure. It is very likely that the lock body will be fastened to a mounting plate inside the safe door. Battery installation may require removal and re-installation of a back panel, boltwork cover, relock device, and other related hardware. Because of this, S&G strongly recommends that battery installation and replacement be performed by your safe dealer or a qualified safe technician.
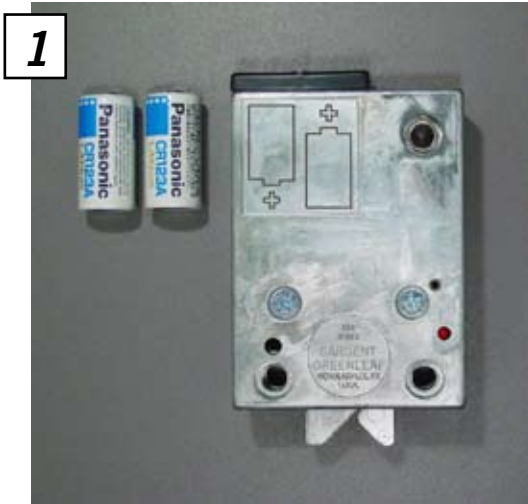
Your Pulsetronic lock requires two 3-volt lithium batteries. We recommend Duracell or Panasonic # CR123A cells. Always install NEW, unused batteries.

Remove the battery compartment cover screw. If there is enough room, battery replacement can be done with the lock still mounted to the safe door. The lock shown here has been removed from the safe for battery installation.
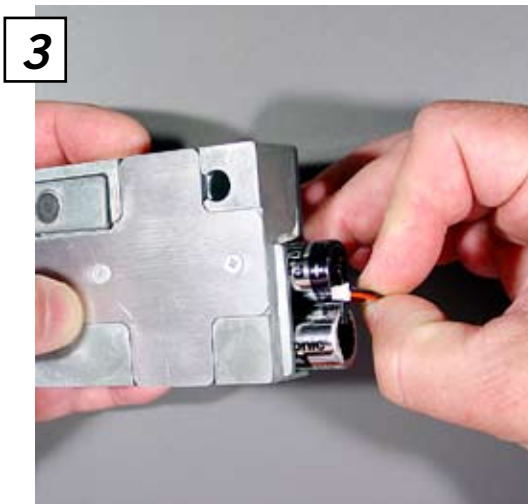
Remove the battery compartment cover. Note that it has a tab that mates with a depression in the bottom of the battery compartment.

If your lock contains the original factory battery pack, you will see two wires that loop over the center of the pack. Grasp these two wires and pull directly away from the case. This will unplug the wire connector from its receptacle inside the case.

Here you can see the battery pack, wires, and white connector, as the battery pack is pulled from the lock case.

Your lock may contain individual batteries without wires or a connector. If so, just pull each battery out of the case to remove it.

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Your Pulsetronic lock requires two 3-volt lithium batteries. We recommend Duracell or Panasonic # CR123A cells. Always install NEW, unused batteries.

Regardless of the battery configuration (wired battery pack or individual batteries) removed, replace with two individual, non-wired lithium batteries. Observe the polarity illustrated on the lock case. Installing batteries incorrectly can cause permanent damage to the lock.
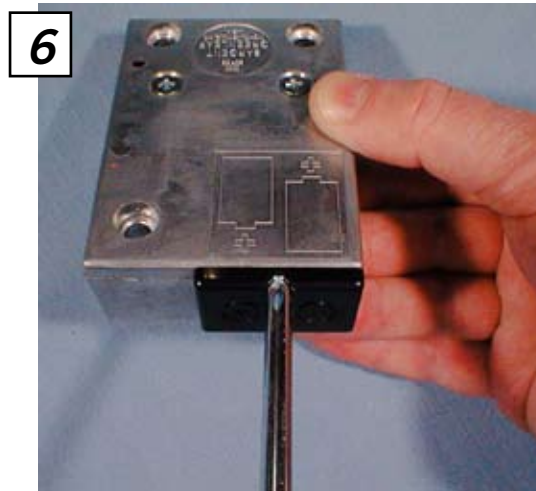
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Install the battery cover, and secure it with the single screw you removed earlier. Do not overtighten.

With the lock installed and the safe door open, place the keypad in its normal operating position and enter:

> 7 7 # (lock emits a complex beep pattern)
> 5 5 # (lock beeps 3 times)
> 1 1 1 1 1 1 # (lock beeps 5 times)*

** see **Lock Activation** on page 5*

KEYPAD SETUP SECTION. . .

Before your Pulsetronic lock can be used for the first time, the keypad must be set up. This is a quick and easy process, accomplished by following the steps listed below. If your safe dealer has already performed this task, jump right to the **LOCK OPERATION SECTION**, on page 5.

All of the setup operations should be conducted with the keypad attached to the safe door in the same manner and in approximately the same place as it will be when routinely used to open the safe. Any or all of these procedures can be used at any time, except when the lock is in tamper lockout mode (25 or more codes have been entered in a 15 minute period).

SET THE LANGUAGE

Your keypad can display in English, German, Spanish, or French. To select a language, make sure the keypad display is blank, then follow this process:

PRESS	DISPLAY SAYS
2 5 #	
Press 1 # for English	1: ENGLISH
Press 2 # for German	2: DEUTSCH
Press 3 # for Spanish	3: ESPANOL
Press 4 # for French	4: FRANÇAIS
	_ #
	(displays your selection)

Keypad messages will now be in the language you have selected.

SET THE AUTO SENSITIVITY

This process optimizes the communication between your keypad and the lock, and is a very important part of the setup process.

PRESS	DISPLAY SAYS	LOCK RESPONDS
7 7 #	SENSITIVITY	there is complex series of beeps as the lock seeks and sets the optimum sensitivity level

The Auto Sensitivity sequence causes the keypad to send a series of eight identical knock patterns to the lock. From this audio transmission, the lock determines the optimum amount of amplification it should use to best "hear" the keypad's signals. During the Auto Sensitivity transmission, the lock will pause briefly when it can no longer "hear" the keypad's knock sequences. Then it will emit a series of beeps to indicate the volume level it has automatically set to best receive the keypad's signals. This will consist of anywhere from two to eight beeps. The volume level beeps may be difficult to hear, because the keypad may still be sending its knock patterns after the lock has stopped "hearing" them and has begun sending the volume level beeps.

Two beeps indicate the safe door transmits sound with little resistance. On the other end of the scale, eight beeps mean the lock is using maximum amplification to receive the keypad's signals. It would probably be a good idea to locate the keypad closer to the lock body, then repeat the Auto Sensitivity sequence to see if sound transmission improves.

The more amplification the lock needs to hear the keypad signals, the more likely it is that extraneous noise will interfere with the lock's operation.

LINK THE KEYPAD AND LOCK

Your keypad and lock must be synchronized before they can communicate. To establish a link between these two components:

PRESS	DISPLAY SAYS	LOCK RESPONDS
5 5 #	LINKING	♩♩♩ when linking is successful

IMPORTANT:

IF YOU ARE PERFORMING THE FIRST LINK AFTER BATTERIES HAVE BEEN INSTALLED, REMOVED, REPLACED, OR MOMENTARILY DISCONNECTED, FOLLOW ONE OF THE ACTIVATION SEQUENCES LISTED ON THE NEXT PAGE. OTHERWISE, SKIP THE ACTIVATION SECTION.

Lock Activation

Your lock incorporates a counter that keeps track of how many times it's opened. This is part of the system that keeps track of the state of the batteries, and it needs to be reset when batteries are removed and re-installed or replaced with new ones. Place the keypad in the same location you normally use to open the safe, then activate the lock by using one of the two following command sequences:

If new batteries have just been installed: 7 7 # (lock emits a complex series of beeps)
5 5 # ♪♪♪ (the lock beeps three times)
1 1 1 1 1 1 # ♪♪♪♪♪ (the lock beeps five times)

If the old batteries have been re-installed: 7 7 # (lock emits a complex series of beeps)
5 5 # ♪♪♪ (the lock beeps three times)
0 0 0 0 0 0 # ♪♪♪♪♪ (the lock beeps five times)

Set the Digit Display

For security reasons, you may not want your code digits to be visible on the keypad display as you enter them. You can choose to display only ★ ★ ★ ★ ★ ★ SYMBOLS WHEN NUMBER KEYS ARE PRESSED. TO TURN THIS FEATURE ON, PRESS:

PRESS   DISPLAY SAYS

3 7 # | ★★★★★★ |

IF YOU DECIDE YOU WANT TO RETURN TO AN ACTUAL DIGIT DISPLAY, JUST REPEAT THE 3 7 # SEQUENCE.

3 7 # | DIGIT |

Lock Operation Section. . .

Open Your Safe

The keypad can be on or off the safe as you enter the code. Be sure to have it in place on the safe when you enter the #. The opening process is accomplished by pressing the six digits of your code, followed by #. The LCD screen will tell you when it's time to turn the safe handle. ***Don't put opening pressure on the handle before the lock tells you to.*** After the "TURN HANDLE" message appears and you hear the lock release with a "click," you have about six seconds to operate the handle and open your safe.

PRESS	DISPLAY SAYS	LOCK RESPONDS
(six code digits) #	TURN HANDLE	- 1 long beep if code is correct - 1 long "brap" tone if code is incorrect - 1 long 8 short 1 long tone if lock cannot open due to handle pressure

When you close your safe door and turn the handle to the locked position, the Pulsetronic will automatically re-lock. It will then beep two times to signal that the lock bolt is extended.

CHANGING YOUR CODE

The Pulsetronic lock is shipped from the factory with a code of 1 2 3 4 5 6 #. You should change this to your own, unique code as soon as possible. You can change your code at any time, providing the lock is not in a tamper lockout period.

Open your safe first, and leave it open during the code changing process. Do not close your safe until you have successfully operated your new code at least three times.

The musical notes indicate beeps from the lock at specific times during code changing. If the lock emits a "brap" sound (♪♪♪♪♪♪♪♪) instead of any of the sets of three distinct chirps (♪♪♪), an error has occurred and the old code is retained. Begin the code change process again.

To accomplish a code change:

| PRESS	DISPLAY SAYS	LOCK RESPONDS
2 2 #	CHANGE CODE ENTER OLD CODE _ _ _ _ _ _ #	
(enter existing six digit code) #		♪♪♪
	ENTER NEW CODE _ _ _ _ _ _ #	
(enter new six digit code) #		♪♪♪
	RE-ENTER NEW CODE _ _ _ _ _ _ #	
(re-enter new six digit code[1]) #		♪♪♪
	TEST NEW CODE _ _ _ _ _ _ #	
(enter new six digit code) #		
	TURN HANDLE	♪♪♪ and lock opens (if code is accepted) ♪♪♪♪♪♪♪♪ (if new code is not accepted)
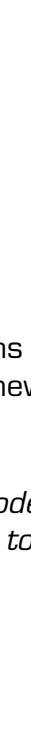
[1]Note: If this code does not match the first entry of your new six digit code, "ERROR" will be displayed on the keypad for two seconds, and the lock will revert to the old code.

USING THE RESET CODE

If you forget or lose the opening code for your lock, the manufacturer of your safe may be able to supply you with a reset code. *Sargent & Greenleaf does not keep a record of your reset code*.

The eight digit reset code is used to set a new opening code into the Pulsetronic lock. It cannot reveal the old code. Make up your new user code before beginning the reset process.

The musical notes indicate beeps from the lock at specific times during code changing. If the lock emits a "brap" sound (♪♪♪♪♪♪♪♪) instead of any of the sets of three distinct chirps (♪♪♪), an error has occurred. Check with your safe maker to verify your reset code.

PRESS	DISPLAY SAYS	LOCK RESPONDS
6 7 #	ENTER RESET CODE _ _ _ _ _ _ _ _ #	
(enter eight digit reset code) #		♪♪♪
	ENTER NEW CODE _ _ _ _ _ _ #	
(enter new six digit code) #		♪♪♪
	RE-ENTER NEW CODE _ _ _ _ _ _ #	
(re-enter new six digit code[1]) #		♪♪♪
	TEST NEW CODE _ _ _ _ _ _ #	
(enter new six digit code) #		
	TURN HANDLE	♪♪♪ and lock opens (if code is accepted) ♪♪♪♪♪♪♪♪ (if new code is not accepted)

Enter your new code, followed by # to verify that it opens the lock. Open the safe door, and check the new code at least three times before closing the safe door.

[1]Note: If this code does not match the first entry of your new six digit code, "ERROR" will be displayed on the keypad for two seconds, and the lock will revert to the old code.

KEYPAD PENALTY LOCKOUT MODE

If more than 25 codes (either correct or incorrect codes) are entered in a 15 minute period, the Pulsetronic keypad will go into a 15 minute lockout period. The keypad will not accept code input, and it will not open during the lockout period. Throughout the lockout, the keypad's display window will cycle through the following three screens:

DISPLAY SAYS

TAMPER
LOCKOUT
14:30

(3rd screen counts down the remaining lockout period)

LOCK PENALTY LOCKOUT MODE

If more than 25 codes (either correct or incorrect codes) are entered in a 15 minute period, the Pulsetronic lock will go into its own 15 minute lockout period. The lock will not open during the lockout period. During this time, the Pulsetronic lock body will emit two long "brap" tones whenever a code entry is attempted.

LOW BATTERY WARNING

When the keypad battery is low, "LOW BATTERY" will be displayed for three seconds before the code entry screen appears. Replace your keypad as soon as possible. The batteries are not serviceable. For a replacement keypad, contact your safe dealer, or go to internet address www.sglocks.com for replacement information.

When the batteries in your lock need to be replaced, a pattern of one long beep followed by eight short beeps will be emitted when the correct code is entered (♩♪♪♪♪♪♪♪♪). The lock can be opened fifty more times once this occurs, and the low battery beep pattern will be heard on every correct code entry as a reminder to change batteries. On the 51st lock opening that is accompanied by the low battery beep pattern, the lock will emit the low battery beep pattern five times and remain unlocked until the batteries are replaced. To signal that the lock is unlocked due to low batteries, it will continue to beep once every two seconds until the batteries fail completely. The lock will not be able to lock and secure your safe until the batteries are replaced.

See the battery removal and replacement instructions, beginning on page 2.

BATTERY SERVICE NOTES

Your lock incorporates a counter that keeps track of how many times it's opened. This is part of the system that keeps track of the state of the batteries, and it needs to be reset when batteries are removed and re-installed or replaced with new ones. Place the keypad in the same location you normally use to open the safe, then activate the lock by using one of the two following command sequences:

If new batteries are being installed: 7 7 # (lock emits a complex series of beeps)
                                            5 5 # ♪♪♪ (the lock beeps three times)
                                            1 1 1 1 1 1 # ♪♪♪♪♪ (the lock beeps five times)

If the old batteries are being re-installed: 7 7 # (lock emits a complex series of beeps)
                                                   5 5 # ♪♪♪ (the lock beeps three times)
                                                   0 0 0 0 0 0 # ♪♪♪♪♪ (the lock beeps five times)

BATTERY SERVICE NOTES (CONTINUED)

If the lock is not activated, it will open the first time the proper opening code is entered, and it will emit a pattern of one long beep followed by eight short beeps (♩♪♪♪♪♪♪♪♪). The pattern will be repeated five times. The lock will remain unlocked and beep once every two seconds. To make the lock operable, you will need to momentarily remove the battery cover, replace it, then perform the activation procedure.

MAINTENANCE AND TROUBLESHOOTING NOTES

Your Pulsetronic lock is engineered to be maintenance free. The only required maintenance is battery replacement, and this does not need to be done until the lock signals a low battery condition.

Lock Does Not Open, but Emits 1 Long Tone—8 Short Tones—1 Long Tone

This beep pattern signals that something is binding the lock bolt. Most often this is the result of putting pressure on the safe's handle before the lock bolt has been able to release. To resolve this problem, do not touch the handle until after you have entered your code and heard the Pulsetronic unlock with a "click."

Door and boltwork binding can cause any lock, mechanical or electronic, to fail to unlock. This is sometimes caused by something caught between the door and frame, or by a safe that is over-stuffed. To open a safe when it will not unlock due to door and/or boltwork binding, place the safe handle in the middle of its possible travel (usually just a fraction of an inch when the safe is locked). Push in on the door with as much of your body weight as possible while entering the lock code. When the door is open, determine and correct the cause of the binding before closing the door again.

Lock Does Not Open, but Emits 1 Long "Brap" Tone

You may have entered your opening code incorrectly. Try your code again. If you still get the single long "brap" tone, there is another possible explanation.

The keypad and the lock are out of sync. Place the keypad on the safe, then perform the **Set the Auto Sensitivity** (page 4) and **Link the Keypad and Lock** (page 4). Now enter your opening code to verify that the keypad and lock are synchronized.

Lock Does Not Open, but Emits 2 Long "Brap" Tones

The lock is in a penalty lockout period. Simply wait 15 minutes, then try your opening code again. It is possible that you might need to perform the **Set the Auto Sensitivity** (page 4) and **Link the Keypad and Lock** (page 4) before your opening code will work.

Lock Opens, but Only After It Emits 1 Long Tone Followed by 8 Short Tones

The batteries located inside the lock body need to be replaced. See **Low Battery Warning** and **Battery Service Notes** on page 8. The battery replacement procedure begins on page 2.

MAINTENANCE AND TROUBLESHOOTING NOTES (CONTINUED)

Lock Does Not Open and is Silent

The lock is not receiving enough audio information from the keypad. Reposition the keypad on the safe to bring it closer to the lock, then perform the **Set the Auto Sensitivity** (page 4) and **Link the Keypad and Lock** (page 4). Try your opening code again.

A noisy environment can also interfere with keypad/lock communication. Reduce the extraneous noise in the area of the safe (turn off radios, machinery, etc.), then try your opening code again. It may be necessary to perform the **Set the Auto Sensitivity** (page 4) and **Link the Keypad and Lock** (page 4) before your code will work.

Lock Stays Unlocked and Emits a Short Tone Every Two Seconds

One of two conditions exist:

1. The lock batteries are drained to the point where they will no longer operate the lock consistently. See the **Low Battery Warning** and **Battery Service Notes** on page 8, and the **Battery Installation and Replacement** section which begins on page 2.

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2. The lock may not have been activated properly after the batteries were replaced. Anytime battery power is removed from the lock body (even momentarily), the Pulsetronic must be activated by momentarily removing battery power from the lock, then following the activation procedure given in the **Battery Service Notes** section on page 8.

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