

Model 6120, 6121 Motorized Electronic Combination Locks

Troubleshooting Guide

This troubleshooting guide is designed to help you identify and solve problems you may encounter with a Sargent & Greenleaf electronic lock. It is not designed as a substitute for the instructions that were shipped with your lock. If the instructions are missing, you can obtain a replacement by contacting S&G at the Nicholasville address listed at the bottom of the page. As an alternative, you can call us at (606) 885-9411. An automated literature extension will record your request and mailing information. An automated lock help line is also available 24 hours a day, 7 days a week. The number is (800) 826-7652, extension 500. You must call from a touch tone phone. Troubleshooting information is also available on S&G's internet home page. Our address is <http://www.sglocks.com>.

Some of the following troubleshooting procedures are intended for the consumer, and others require the skills of a qualified safe technician. The Sargent & Greenleaf line of electronic combination locks is not designed to be user serviceable. We specifically do not recommend any repairs beyond replacing either the keypad or the lock body as a unit.

All applicable troubleshooting procedures should be tried before a safe is forcibly opened. Whenever a safe must be opened by drilling, S&G recommends you contact the safe manufacturer first. The safe maker will supply appropriate procedures for dealing with his product.

If you find it necessary to locate a competent safe technician in your area, S&G suggests you call the Safe & Vault Technicians Association, at (214) 821-7233. Any work which you think may be submitted to S&G as a warranty claim must be cleared by our Customer Service Department prior to completion.

Basic Operation:

The Sargent & Greenleaf line of electronic locks is powered by two nine volt alkaline batteries which are located under the keypad housing. They can be easily replaced by following the instructions that originally came with the lock.

The lock can be ordered in two basic lock bolt configurations—a traditional square bolt for use with most safe designs, and a beveled spring bolt for direct locking applications on light safe doors and inner compartments of burglary safes.

When the correct code is entered and followed by the # sign, a motor retracts the lock bolt. This allows the container to be opened. The bolt remains retracted for six seconds; then the motor extends the bolt again. S&G electronic locks are equipped with a spring mechanism to automatically extend the bolt after any obstruction, such as safe boltwork, is moved out of its path.

Some safe manufacturers ship safes with the lock bolt retracted. With the door open and the safe handle turned fully to the locked position, enter the code (followed by the # sign). Wait fifteen seconds, then repeat the procedure. The lock should now cycle normally. Close your safe door only after checking for proper lock operation at least three times.



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| PROBLEMS | POSSIBLE CAUSE | POSSIBLE SOLUTION(S) |
|---|---|---|
| 1) Model 6120 beeps and LED flashes on key press, but does not open with a six digit code | <ul style="list-style-type: none"> • # sign is not being pushed after code is entered • Wrong code is being used • Batteries need replacement • Lock is in security lockout mode • Keypad is defective | <ul style="list-style-type: none"> • Press # sign after entering code • Verify that you have the correct code for the lock • See Battery Check and Replacement Procedure (#6) • Perform Lockout Test Procedure (#1) and Override Procedure (#2) if Master Code is available • Replace with a keypad known to be good |
| 2) Lock opens but doesn't beep or light when a key is pressed | <ul style="list-style-type: none"> • Feedback wire is broken • Sounder or LED is defective | <ul style="list-style-type: none"> • See Wire Check and Repair Procedure (#5) • Replace keypad |
| 3) Lock will not enter programming mode when programming sequence is entered | <ul style="list-style-type: none"> • Lock is in security lockout mode • Incorrect Master Code is being used | <ul style="list-style-type: none"> • Perform Lockout Test Procedure (#1) • Perform Master Code Check Procedure (#3) |
| 4) Lock can be heard starting, but not running far enough to open the safe | <ul style="list-style-type: none"> • Bolt is stalled due to side pressure • Batteries are weak | <ul style="list-style-type: none"> • Move safe handle to fully locked position and enter code again • Move safe handle to fully locked position and perform Walk Back Procedure (#4) • See Battery Check and Replacement Procedure (#6) and Low Battery Warning Check Procedure (#10) |
| 5) Lock emits "click-click" sound but motor cannot be heard running | <ul style="list-style-type: none"> • Drive nut is cross-threaded | <ul style="list-style-type: none"> • Container must be forcibly opened by a qualified safe technician |
| 6) Motor can be heard running free, but safe does not open | <ul style="list-style-type: none"> • Stop pin has dislodged • Insufficient bolt retraction • Weak batteries • Safe's relock device is engaged | <ul style="list-style-type: none"> • Perform Stop Pin Check and Opening Procedure (#7) • Perform Walk Back Procedure (#5) • See Battery Check and Replacement Procedure (#6) and Low Battery Warning Check Procedure (#10) • Perform Relock Device Check Procedure (#11) |

| PROBLEMS | POSSIBLE CAUSE | POSSIBLE SOLUTION(S) |
|--|--|---|
| 7) Lock opens intermittently when using valid codes | <ul style="list-style-type: none"> • Connection of wires to back of keypad is loose • Keypad is bad | <ul style="list-style-type: none"> • Perform Keypad Connector Check (#8) • Replace with new keypad |
| 8) Lock beeps three times when code is entered, but doesn't open | <ul style="list-style-type: none"> • Lock is in time delay mode | <ul style="list-style-type: none"> • Wait for time delay to expire, then delete time delay—see lock operating instructions or consult toll free help line |
| 9) Unable to delete time delay | <ul style="list-style-type: none"> • Time delay can only be deleted during the opening window • You are using the Supervisor code (model 6121 only) or a User Code (either model) instead of the Master Code | <ul style="list-style-type: none"> • Wait for opening window before attempting to delete time delay—see lock operating instructions or consult toll free help line • The Master Code must be used to delete the time delay. Perform Master Code Check Procedure (#3)—see lock operating instructions or consult toll free help line |
| 10) Unable to set time delay for more than nine minutes or to adjust opening window on model 6121 lock | <ul style="list-style-type: none"> • Lock may be model 6120 | <ul style="list-style-type: none"> • Perform Model Check Procedure (#9)—see lock operating instructions or consult toll free help line |
| 11) After entering the code for a spring bolt lock, the motor starts, but the safe door cannot be opened | <ul style="list-style-type: none"> • Bolt of the lock is binding against the door frame or door strike | <ul style="list-style-type: none"> • Push in on the door while entering the code; remove the source of the binding after the door is open • Perform Walk Back Procedure (#5) |
| 12) Lock motor runs continuously after a battery change, and the lock stays locked | <ul style="list-style-type: none"> • The logic circuit did not reset properly when power was restored to the logic circuits | <ul style="list-style-type: none"> • Unplug the wire connector from the back of the keypad, leave it unplugged for at least 30 seconds, then plug it back into the receptacle on the back of the keypad. The processor should reset properly. |
| 13) Lock opens okay, but bolt will not re-extend far enough to lock safe. | <ul style="list-style-type: none"> • Batteries are weak | <ul style="list-style-type: none"> • See Battery Check and Replacement Procedure (#6) |

Test Procedures

1. Lockout Mode Test Procedure

The S&G 6120 lock has a *wrong code lockout feature* that prevents the lock from operating for fifteen minutes after four consecutive incorrect code entries. This to prevent tampering. During this period, the lock will beep and the light will flash each time a key is pressed, but the lock will not accept input. To determine whether or not the lock is in lockout, perform the following steps:

Enter the programming mode by pressing 74 ★, followed by any six-digit code and the # sign. The LED should light and the lock should beep as each button is pressed. After the single beep from the final # press, the lock will react in one of the following ways:

- A) Emit no sound at all, indicating that it is in lockout mode.
- B) Emit five short beeps, indicating the correct Master Code has been entered and the lock is not in lockout mode,
- C) Emit a long, continuous tone (sometimes referred to as the “raspberry” sound), indicating the entered code is not the correct Master Code and the lock is not in lockout mode.

2. Lockout Override Procedure:

The lockout period can be overridden by entering the Master Code, followed by the # key, and then entering any valid code (Master Code or any valid User Code) followed by the # key.

3. Master Code Check Procedure:

When the lock is not in lockout mode (see Procedure 1), the correct Master Code can be verified by attempting to enter the programming mode. Enter 74 ★ followed by the Master Code and #. The lock will either:

- A) Emit five short beeps, indicating that the code entered is the correct Master Code.
- B) Emit a long, continuous tone (sometimes referred to as the “raspberry” sound), indicating that the entered code is not the correct Master Code. Note: The Supervisor Code of a model 6121 lock will allow you to enter the programming mode, but its use is restricted. It will not permit changing of the Master Code, Time Delay, or Opening Window value.

4. Walk Back Procedure:

This procedure is used to retract the bolt when there is too much side pressure on the lock bolt or when other factors may prevent full bolt retraction. It involves repetitive retractions of the bolt without allowing it to extend again. The first step is to make sure the safe bolt work is not binding on the lock bolt. This is accomplished by insuring that the handle is in the fully locked position. If there is any travel in the handle, place the handle in the middle of the travel and enter a valid code into the lock. This action alone may be enough to allow the lock to open. The second step is to replace the batteries with a fresh set of nine-volt alkaline batteries (“Extra Heavy Duty” batteries are not alkaline and will not work). S&G recommends Duracell® brand batteries. Fresh batteries will often supply the extra power necessary to open a lock which is experiencing bolt side pressure. If neither one of the above procedures works, perform the following steps:

- A) Remove the keypad from the door, but keep it plugged in to the lock.
- B) Enter a valid code, making sure the safe handle is in the fully locked position.
- C) After you hear the motor finish its initial run (but before it extends the bolt again), unplug the wire connector from the underside of the keypad.

4. Walk Back Procedure (cont.):

- D) See if the safe handle can be turned to the unlocked position. If not, move the handle back to the fully lock position and wait ten seconds before proceeding.
- E) Plug the wire connector back into the receptacle on the underside of the keypad, and repeat the process starting at Step B.

If the safe does not open after ten tries, refer to the next step in the chart. For spring bolt locks (used on inner compartments and lightweight safes without boltwork), pushing in on the door when entering the code and # key may be sufficient to allow the door to open.

5. Wire Check and Repair Procedure:

The 6120 and 6121 locks require four wires from the connector on the underside of the keypad to the motor lock for normal operation. One of the wires (orange at this time) provides the signal back from the lock to the LED and sounder. The lock will operate with this wire broken, but it will not beep and the LED will not flash. If any other wire is broken, the lock will not operate until it is repaired. If a break can be felt or seen, or if a tear in the insulation is observed, the wire should be spliced and/or insulated before proceeding. S&G recommends 24-gage stranded copper wire for these repairs. After the container is successfully opened, the lock should be replaced.

6. Battery Check Procedure: (voltmeter that can measure 9 v.d.c is required)

Make sure the batteries being used with the lock are marked as alkaline. "Extra Heavy Duty" batteries are not alkaline. Use a voltmeter to check the voltage level of each battery. Each one should indicate at least 7.75 volts. If either battery is below this voltage, replace it with a fresh battery. Fresh batteries will indicate voltage levels of 9.2 volts or greater.

7. Stop Pin Check and Opening Procedure:

Check: The stop pin is the pin which holds the lock bolt in the lock. On a few early models it could dislodge and prevent the drive mechanism from engaging. The motor can be heard running, but the lock bolt does not retract. To verify this problem, make sure the safe boltwork is not binding the lock bolt (see the information in Step 4). Enter a valid code and listen to the sound the motor makes. If it makes no sound at all, the problem is not a dislodged stop pin. If the motor seems to run normally, wait until it goes through its retraction and extension cycle (about 6 seconds). Then enter a valid code while pulling the safe handle toward the unlocked position. If the motor sounds the same as it did during the previous cycle (free running), a dislodged stop pin is the most likely problem.

Opening: If the safe can be moved, the most successful method is to orient the safe so the lock is in a vertical-up position (with the lock bolt pointing up). Gravity may help the drive mechanism engage long enough to unlock the safe. The lock may need to be operated two or three times with the safe in this position. The handle should be tried after each attempt. If this technique is unsuccessful, drilling is the remaining option. Contact the safe manufacturer for recommendations.

8. Keypad Connector Check:

If the lock works intermittently, check for loose wires at the keypad connector (underside of the keypad). It is a four-wire connection. Inspect each wire while pushing it and attempting to gently rotate the wire where it enters the connector. If any motion is noted, try pushing in on the wire to attempt to tighten it. Operate the lock with a valid code. If the looseness is still present, S&G recommends replacing the lock.

9. Model Check Procedure:

There is a simple test to verify if your lock is a model 6120 or a 6121. Press *** 6 #** and listen to the lock. If it is a model 6120, it will remain silent. If the lock is a model 6121, it will emit a long, continuous tone.

10. Low Battery Warning Check Procedure:

Your lock is equipped with a low battery warning feature that changes the pitch of the sounder when the batteries need to be replaced. It also incorporates a low battery tester and warning demonstrator that simulates the low battery warning signal for one lock cycle. To operate the demonstrator, press and hold the ***** key until three beeps are heard. Now enter a valid code while listening to the sounder. If the sounder has changed pitch, the batteries are okay (although it is always a good idea to check them with a voltmeter). If the sounder does not change pitch, the lock was already in low battery mode when the demonstrator was engaged, and the batteries should be changed before any further troubleshooting is attempted.

11. Safe Relock Device Engaged Check Procedure

It is possible for the safe's relock device(s) to activate during shipment. If the safe has recently been serviced or handled roughly during shipment, the relock device could be engaged. Use the following procedure to verify this.

- A) With the lock in the locked condition, note the amount of motion in the safe handle.
- B) Locate the safe handle in the middle of its travel range, and operate the lock with a valid code
- C) As soon as the lock bolt retracts, again note the range of motion in the safe handle.

If the handle moves farther when the lock bolt is retracted, but the safe does not open, a relock device is probably the cause. The service of a trained and experienced safe technician should be employed. Contact the safe manufacturer for recommendations.

The Safe & Vault Technicians Association, based in Dallas, Texas, can refer you to a safe technician in your area. The association's number is (214) 821-7233.