

OPERATING INSTRUCTIONS

S&G™ Model 2740B Electromechanical Safe Lock

The S&G® 2740B Model Electromechanical Safe Lock combines and simplifies the familiar operation of a mechanical lock with the advanced security features of a sophisticated electronic device. Follow these instructions carefully to get the best service from your lock.

INTRODUCTION

- The S&G® Model 2740B Electromechanical Safe Lock is shipped from the factory in **single user mode** with a **factory shipping combination of 50-25-50**. This combination is used to open the lock and change the combination(s). You should set the lock to your own, unique combination(s) before storing anything of value in the safe or cabinet.
- All setup, maintenance, and troubleshooting operations must be performed with the safe or container OPEN. Never close the container with a change key inserted in the lock. At the conclusion of a combination change or service operation the lock should be checked to make sure it operates at least three times consecutively on the intended combination before closing the safe or container.
- The lock will sometimes emit a beep or series of beeps to communicate its state. A table of the eleven possible beep patterns is included in this document (page 11).
- All combinations must contain three numbers, ranging from 0 to 99. Unlike mechanical locks, the 2740 has no forbidden zone, and it does not have a restriction on how close adjacent numbers of the combination may be to one another.
- If you stop dialing for more than ten seconds, the lock will reset, forcing you to begin the combination entry sequence all over again.
- If ten incorrect combinations are entered in a row, the S&G® Model 2740B Electromechanical Safe Lock will shut down for a period of ten minutes. Entering a correct combination before reaching the tenth incorrect entry in

a row resets the wrong combination counter. It doesn't make any difference how much time intervenes between consecutive wrong combination entries. However, entering a correct combination before reaching the tenth incorrect entry

in a row resets the wrong combination counter. There is no alternative to waiting for the penalty time to expire once it has begun.

- The S&G® Model 2740B Electromechanical Safe Lock is powered by a main battery (CR123A lithium camera-type), and also uses a long-life backup battery (CR2450 coin cell). Both batteries must be changed at the same time, preferably by a technician who has successfully completed S&G factory approved training.
- The 2740B will switch to the backup battery and latch OPEN if the ten-beep low battery signal is repeatedly ignored. Opening with the internal backup battery may take as long as five seconds after the combination is entered. If you find that your lock will not lock, the batteries will have to be replaced, and it will need to be reset using a **444 Device**.
- The lock's combination can be changed by use of a change key. The change key can be used by a safe custodian or security officer following the appropriate instructions included in this document.
- Lock bodies and covers are matched components. Do not replace a lock cover with the cover from another lock. At best, this will produce erratic lock operation.



SARGENT AND GREENLEAF®

Sargent & Greenleaf, Inc.
PO Box 930
Nicholasville, KY 40340-0930
Phone: (800)-826-7652 Fax: (800)-634-4843
Phone: (859)-885-9411 Fax: (859)-887-2057

Sargent & Greenleaf S.A.
9, chemin du Croset
1024 Ecublens, Switzerland
Phone: +41-21 694 34 00
Fax: +41-21 694 34 09

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IMPORTANT DIALING NOTES

The 2740B allows you to dial directly to a combination number without counting dial revolutions for every entry. Whenever you are dialing to a number, it is important to avoid “overshooting” the number, then backing up to it. If you overshoot the number, you can continue rotating the dial in the same direction for an extra turn (or two, or three, or more), then stop precisely on the desired number. Unlike a mechanical lock, the dial can be rotated any number of rotations for entry of any combination number.

If adjacent combination numbers are within two numbers of each other (26-24-3 for instance), don't dial the short distance directly to the second number, but turn a full revolution, then dial to the number.

To OPEN THE LOCK IN SINGLE USER MODE

Single user mode simply means that one combination opens the lock. The **opening index** is the mark at the top of the dial ring at the 12 o'clock position. Follow this procedure:

1. Turn the dial left (counterclockwise) at least two complete revolutions, then stop precisely on the first number of the combination.
2. Turn the dial right (clockwise), stopping when the second combination number comes to the opening index.
3. Turn the dial left, stopping when the third combination number comes to the opening index.
4. Turn the dial right. If you have entered your combination correctly, the dial will come to a positive stop before you have turned more than two revolutions.

If the lock emits 10 beeps upon opening, both lock batteries must be changed. The 10-beep low battery signal will repeat every twenty seconds for one minute after the lock is dialed open.

To re-lock the 2740B after the container is closed and its handle is turned to the fully locked position, turn the dial at least ½ revolution left (counterclockwise).

To OPEN THE LOCK IN DUAL USER MODE

Dual user mode simply means that two different combinations are needed to open the lock. Typically, each combination is held by a different person for security reasons. Either combination can be entered first. Both combinations must be entered within two minutes.

The **opening index** is the mark at the top of the dial ring at the 12 o'clock position. Follow this procedure:

1. Turn the dial left (counterclockwise) at least two complete revolutions, then stop precisely on the first number of the 1st combination.
2. Turn the dial right (clockwise), stopping when the second number of the 1st combination comes to the opening index.
3. Turn the dial left, stopping when the third number of the 1st combination comes to the opening index. Turn the dial right about ten numbers. The lock will emit four quick beeps.
4. Turn the dial left (counterclockwise), stopping when the first number of the 2nd combination comes to the opening index.
5. Turn the dial right (clockwise), stopping when the second number of the 2nd combination comes to the opening index.
6. Turn the dial left, stopping when the third number of the 2nd combination comes to the opening index.
7. Turn the dial right. If the two combinations have been entered correctly, the dial will come to a positive stop before you have turned more than two revolutions.

Note: If either of the two combinations have not been dialed correctly, the lock will emit a brap (one long beep). Follow steps 1-7 again, making sure the correct combinations are dialed precisely to the opening index.

If the lock emits 10 beeps upon opening, both lock batteries need to be changed. The 10-beep low battery signal will repeat every twenty seconds for one minute after the lock is dialed open.

To re-lock the 2740B after the container is closed and its handle is turned to the fully locked position, turn the dial at least ½ revolution left (counterclockwise).

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DIAL CALIBRATION — No CHANGE KEY REQUIRED

A new, uncalibrated lock will sound three quick beeps...pause...sound another three quick beeps...pause...and sound another three quick beeps whenever the dial is turned. It's quite aggravating, as it's intended to be. This is the lock's way of insisting that the dial be calibrated to zero so that it has a solid, reliable reference point for determining what numbers are being dialed during setup and daily usage. Fortunately, dial calibration is easy and requires no special tools.

The change key should NOT be inserted in the lock.

Turn the dial right (clockwise) a few revolutions. On each revolution (more or less) one long beep (*brap*) will sound. When you've turned the dial right two or more revolutions*, a single short beep followed by a series of short beeps will sound. After the series of short beeps sound, continue turning the dial right precisely to zero. If you dial past it (even slightly), continue dialing right until it comes to the index mark again. Once you've stopped precisely on zero, turn the dial left a full revolution, stopping precisely to zero. Again, if you dial past it (even slightly), continue dialing left until it comes to the index mark again. Once you've stopped precisely on zero, reverse dial direction and turn right precisely to zero again. By now you know the drill. Keep turning left and right precisely to zero until the lock sounds five quick beeps. This means you've successfully calibrated the dial to zero. The key to success is to dial very, very precisely.

The 2740B lock can be calibrated to zero anytime, and it's a good idea to do so whenever you find it takes more than one or two attempts to dial open the lock, even though you are being very careful and staying focused while dialing. It takes less than a minute to calibrate the dial to zero.

* The number of revolutions you must turn before hearing the short beep followed by a series of short beeps varies depending on the speed of dialing. Faster dialing means fewer turns, slower dialing means more turns.

BATTERY CONDITION CHECK — No CHANGE KEY REQUIRED

The change key should NOT be inserted in the lock.

Turn the dial right (clockwise) a few revolutions. On each revolution (more or less) one long beep (*brap*) will sound. When you've turned the dial right two or more revolutions*, a single short beep followed by a series of short beeps will sound. Batteries at or near full capacity will sound four short beeps after the initial short beep. If only two beeps sound, batteries are at about half capacity, and you would be wise to think about replacing both of them in the near future (see battery change section).

After the battery condition beeps sound, do not turn the dial for ten seconds to give the lock time to exit the battery test mode.

* The number of revolutions you must turn before hearing the short beep followed by a series of short beeps varies depending on the speed of dialing. Faster dialing means fewer turns, slower dialing means more turns.

LOW BATTERY WARNING

If you enter a valid combination and on the final turn of the dial to the right to retract the lock bolt the lock sounds ten quick beeps...pauses...sounds another quick ten beeps...pauses...then sounds another quick ten beeps, the lock is signalling a low battery condition. Replace the lock batteries immediately (see battery change section). If you continue to operate the lock with low batteries, it will sound the low battery signal on each subsequent opening. It will do this for approximately one hundred openings, then go into *Lock Open Latch*. Now it will not be possible to place the 2740B into locked condition, and the container cannot be secured.

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LOCK OPEN LATCH — *444 Device* REQUIRED

If the lock's low battery warning signal is ignored for approximately one hundred consecutive openings, the 2740B will go into *Lock Open Latch* condition. It cannot be locked. To reset the Lock Open Latch, attach a fresh 9-volt battery to a Sargent & Greenleaf *444 Device* (S&G part number 2740-444), then plug the device's connector into the lock's change key port on the outside of the cover. As soon as it's plugged into the cover, the lock motor will run briefly to reset the Lock Open Latch condition. Unplug the *444 Device*, and turn the dial to extend the lock bolt. **REMOVE THE LOCK COVER AND REPLACE BOTH LOCK BATTERIES IMMEDIATELY. DO NOT ATTEMPT TO OPERATE THE LOCK WITH THE *444 Device* LEFT PLUGGED INTO THE COVER.**



S&G 444 Device



S&G 444 Device with attached 9-volt battery



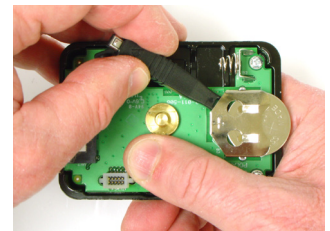
Connecting the 444 Device to the lock change key port

CHANGING THE LOCK BATTERIES

1. With the container (safe) door or drawer open, extend the locking bolts. This is referred to as locking the container open.
2. If the 2740B lock bolt is not extended already, turn the dial left (counterclockwise) to extend it.
3. Remove the two lock cover screws and carefully lift the cover off of the lock body. Do not let any metal (conductive) tools touch anything on the underside of the cover.
4. Remove the CR123A camera-type battery from the cover first.



5. You can use the back end of a 2740 change key to help push the CR2450 coin cell partially out of its holder. Then you will be able to grasp it with your fingers and pull it completely out of the holder. Dispose of both batteries responsibly.



6. Wait one minute after removing the old batteries before installing the fresh, new ones.
7. Slide a new coin cell battery into its housing first, positive side up. Within one minute, install the camera-type battery into its receptacle. Never force batteries into place. If batteries are installed backwards (incorrect polarity), no electrical damage will occur, but the lock will not function properly.
8. When the backup battery (coin cell) and then the main battery (camera-type) are installed, you will hear a beep. If you have not waited one minute between removal of the old batteries and installation of the new ones, the beep may not occur. If you do not hear the beep, remove both batteries and repeat the installation process, inserting the coin cell battery first.

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CHANGING THE LOCK BATTERIES (CONTINUED)

9. During a 10-second period following the initial beep, the lock will perform a battery check. You will hear another single beep if the 10-second battery check is successful. It is recommended that you wait for this beep before installing the cover onto the lock. If the lock determines that one or both batteries are not fresh or that they are installed incorrectly, there will be a distinct low battery signal following the battery check period. The signal consists of ten quick beeps...pause...ten quick beeps...pause...ten quick beeps. You should then remove both batteries for at least one minute, then re-install them beginning with step 6. If you still do not hear the battery confirmation beep at the end of the ten-second battery check or if you hear the low battery signal, replace both batteries with new, fresh ones. If the lock is put into service without confirmation of good batteries and is subsequently dialed open, it will immediately go into the *Lock Open Latch* state, forcing you to install fresh batteries.
10. Re-install the lock cover using both cover screws. The longer cover screw goes in the screw hole closest to the change key receptacle, as indicated on the lock cover label.

*Note: This is a great time to employ the **Dial Calibration** and **Battery Condition Check** procedures found on page 5.*

11. **WITH THE CONTAINER DOOR OR DRAWER OPEN**, verify that the operating combination(s) can indeed be used to open the lock. Check proper operation of the combination(s) a minimum of three times before locking the container door or drawer.

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DUAL USER MODE FUNCTION — CHANGE KEY REQUIRED

Dual user mode requires two different combinations to open the lock. After the first combination is entered, the second combination must be entered within two minutes to accomplish an opening. Here is the process to change the 2740B from single user mode to dual user mode:

1. Open the lock using the existing single user combination.
2. With the safe or container open, extend the lock bolt fully.
3. Wait ten seconds, then insert the change key into the receptacle in the lock cover.
4. Turn the dial right (clockwise). As you turn, the lock will sound one short beep. Continue to turn the dial right at least two times to 20.
5. Turn the dial left (counterclockwise). As you begin to turn the dial, the lock will sound three quick beeps. Continue dialing left at least two revolutions, then stop when the first number of the existing single user combination comes to the index.
6. Turn the dial right (clockwise) until the second number of the existing single user combination comes to the index.
7. Turn the dial left until the third number of the existing single user combination comes to the index. Then turn the dial right until you hear three quick beeps from the lock.
8. Turn the dial left (counterclockwise) at least two complete revolutions. Now stop when the first number of the NEW user #1 combination comes to the index.
9. Turn the dial right (clockwise) until the second number of the NEW user #1 combination comes to the index.
10. Turn the dial left until the third number of the NEW user #1 combination comes to the index. Then turn the dial right until you hear three quick beeps from the lock.
11. Turn the dial left (counterclockwise) at least two full revolutions, then stop when the first number of the NEW user #2 combination comes to the index.
12. Turn the dial right (clockwise) until the second number of the NEW user #2 combination comes to the index.
13. Turn the dial left until the third number of the NEW user #2 combination comes to the index. The lock will sound two quick beeps.
14. Enter the two new dual user combinations one more time, following steps 8 through 13.
When you complete step 13 again, turn the dial right (clockwise) and instead of hearing the two quick beeps, five quick beeps will sound to indicate a successful combination change. Continue turning the dial right to retract the lock bolt.
15. Remove the change key from the lock.

Do not close the safe door or container drawer until you have checked the new combinations for proper operation at least three times with the door or drawer OPEN. If necessary, refer to page 3 for dual user operating instructions.

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SINGLE USER MODE FUNCTION — CHANGE KEY REQUIRED

Single user mode requires just one combination to open the lock. Here is the process to change the 2740B from dual user mode to single user mode:

1. Open the lock using the existing dual user combinations.
2. With the safe or container open, extend the lock bolt fully.
3. Wait ten seconds, then insert the change key into the receptacle in the lock cover.
4. Turn the dial right (clockwise). As you turn, the lock will sound one short beep. Continue to turn the dial right at least two times to 10.
5. Turn the dial left (counterclockwise) at least two complete revolutions, then stop when the first number of the 1st existing dual user combination comes to the opening index.
6. Turn the dial right (clockwise), stopping when the second number of the 1st existing dual user combination comes to the opening index.
7. Turn the dial left, stopping when the third number of the 1st existing dual user combination comes to the opening index. Turn the dial right about ten numbers. The lock will emit three quick beeps.
8. Turn the dial left (counterclockwise) at least two revolutions, then stop when the first number of the 2nd existing dual user combination comes to the opening index.
9. Turn the dial right (clockwise), stopping when the second number of the 2nd existing dual user combination comes to the opening index.
10. Turn the dial left, stopping when the third number of the 2nd dual user combination comes to the opening index.
11. Turn the dial right (clockwise). As you begin to turn the dial, the lock will sound three quick beeps.
12. Turn the dial left at least two complete revolutions, then stop when the first number of the NEW single user combination comes to the index.
13. Turn the dial right (clockwise) until the second number of the NEW single user combination comes to the index.
14. Turn the dial left until the third number of the NEW single user combination comes to the index, then turn the dial right until the lock sounds three quick beeps.
15. Turn the dial left (counterclockwise) at least two full revolutions, then stop when the first number of the NEW single user combination comes to the index.
16. Turn the dial right (clockwise) until the second number of the NEW single user combination comes to the index.
17. Turn the dial left until the third number of the NEW single user combination comes to the index. Then turn the dial right, and the lock will sound five quick beeps. Continue turning the dial right until it comes to a positive stop and the lock is unlocked.
18. Remove the change key from the lock cover.

Do not close the safe door or container drawer until you have checked the new combination for proper operation at least three times with the door or drawer OPEN. If necessary, refer to page 3 for single user operating instructions.

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UNKNOWN CODE FUNCTION — CHANGE KEY REQUIRED

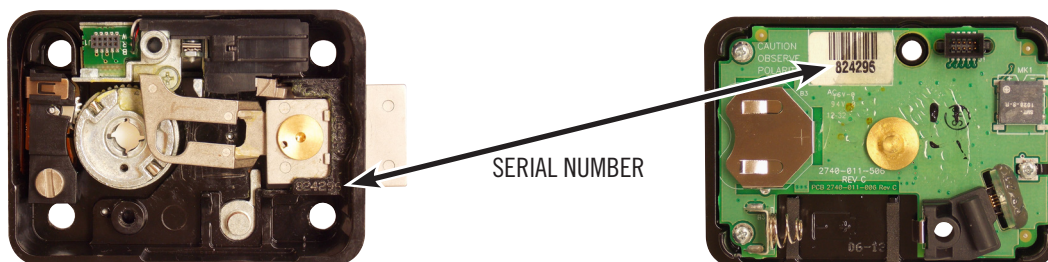
To recover from a lost or unknown combination, you will need the six-digit serial number stamped into the lock case below the bolt and on the circuit board located on the underside of the cover (see photographs below). Divide the serial number into three two-digit numbers. This will be your recovery combination. You will also need to make up a new operating combination, as the recovery process requires you to enter a new operating combination. Here's the process:

1. The container must be open, and the lock bolt fully extended.
2. Wait ten seconds, then insert the change key into the receptacle in the lock cover.
3. Turn the dial right (clockwise). As you turn, the lock will sound one short beep. Continue to turn the dial right at least two times to 0.
4. Turn the dial left (counterclockwise). As you begin to turn the dial, the lock will sound three quick beeps. Turn the dial at least two full revolutions to the left, then stop when the first number of the RECOVERY combination comes to the index.
5. Turn the dial right (clockwise) until the second number of the RECOVERY combination comes to the index.
6. Turn the dial left until the third number of the RECOVERY combination comes to the index. Then turn the dial right until you hear three quick beeps from the lock.
7. Turn the dial left (counterclockwise) at least two full revolutions, then stop when the first number of the NEW single user combination comes to the index.
8. Turn the dial right until the second NEW single user combination number comes to the opening index.
9. Turn the dial left until the third NEW single user combination number comes to the index. Then turn the dial right until you hear three quick beeps from the lock.

The new combination must be entered again for verification.

10. Turn the dial left (counterclockwise) at least two complete revolutions, then stop when the first number of the NEW single user combination comes to the index.
11. Turn the dial right (clockwise), stopping when the second NEW single user combination number comes to the index.
12. Turn the dial left, stopping when the third NEW single user combination number comes to the index. Now turn the dial right, listening for five quick beeps to indicate a successful combination change. Continue turning the dial right to retract the lock bolt.
13. Remove the change key from the lock. The 2740B is now in single user mode, and will operate on your new combination.

Do not close the safe door or container drawer until you have checked the new combination for proper operation at least three times with the door or drawer OPEN.



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BEEP PATTERNS

BEEP PATTERN IDENTIFICATION TABLE

The 2740B lock provides information to the user in the form of audible beeps. There are two kinds of beeps—a short, distinct beep and a long beep that is ten times as long as the standard beep. We refer to the long beep as a *brap*.

The following table identifies all of the beep patterns the 2740B lock can emit and what they mean. Note that some beep signals can mean more than one thing, depending on what operation is being performed.

Beep Pattern	Description
1 beep	change key has been inserted and recognized
2 beeps	after the 2nd dual user code is entered for the first time while changing from single to dual user mode
3 beeps	sounded between most steps of a programming sequence (the exception is the preceding table entry)
4 beeps	sounded after the first combination is successfully entered in dual control mode
5 beeps	sounded when a dial calibration, combination change, operating mode change, or code recovery procedure is completed
10 beeps	sounded whenever the lock is opened to indicate low battery condition (repeats periodically)
3 beeps/pause/3 beeps/pause/3 beeps	sounded when the lock has never been calibrated and needs calibration
1 brap (long beep)	sounded when an error occurs in a programming or dialing sequence
2 braps (long beeps)	sounded when the dial is turned while the lock is in a ten minute penalty time
1 beep/pause/4 beeps	battery condition is okay
1 beep/pause/2 beeps	battery condition marginal (replace batteries)

WARRANTY

S&G™ Model 2740B Electromechanical Safe Lock

WARRANTY

Seller warrants that for five years from the date of shipment from Seller's point of manufacture, the goods shall be free from defects in material and workmanship, provided the goods are normally and properly used according to the Seller's written instructions.

THIS WARRANTY IS EXPRESSLY MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. S&G DOES NOT WARRANT THAT THE GOODS ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE EXCEPT AS EXPRESSLY PROVIDED HEREIN.

Seller's entire liability and Buyer's exclusive remedy in the event that the goods do not conform to the foregoing warranty shall be Seller's repair or replacement of the goods (including payment of freight costs to and from point of manufacture).

UNAUTHORIZED USE OF DIALS RINGS, AND/OR SPINDLES NOT MANUFACTURED BY THE SELLER IN CONJUNCTION WITH ITS COMBINATION LOCK PRODUCTS INVALIDATES THE WARRANTY. SELLER SHALL HAVE NO LIABILITY FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT OR SPECIAL DAMAGES. SELLER DOES NOT WARRANT ITS LOCK PRODUCTS TO BE IMPERVIOUS TO FORCIBLE OR SURREPTITIOUS ENTRY, AND SELLER SHALL HAVE NO LIABILITY FOR DAMAGE TO OR LOSS OF PROPERTY SOUGHT TO BE PROTECTED BY ANY SUCH LOCK.