LEE DECODER KIT

No. DK-101

APPLICATION:

The Lee Decoder is for use to decode SARGENT & GREENLEAF safe and safe deposit box, lever tumbler key locks with changable tumblers (key change tumblers), model numbers as follows: 4160, 4161, 4162, 4140, 4142, 4142A

With added attachments, the tool will decode the following: 4120, 4122, 4122A

With added attachments, the tool will decode the renter's side of the following double locks: 4320, 4340

DOUBLE CUSTODY SINGLE HORN:

Any of the 4100 series locks that are set to require two keys can be decoded and opened without having either the renter's key or the guard key.

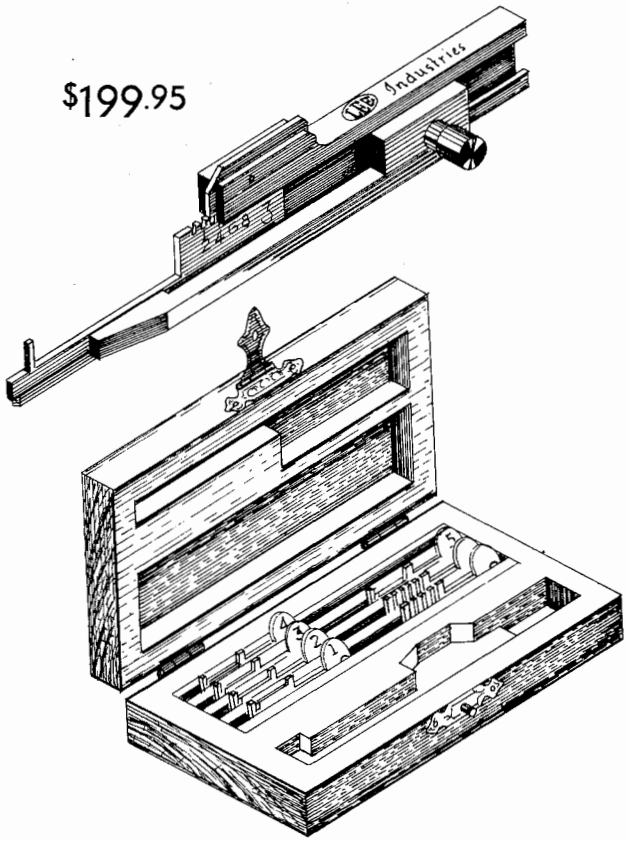
MAL-FUNCTION:

Most mal-functions of the locks are due to slipping of the tumbler to another combination or due to excess wear of the key and tumblers. In almost all cases where the key quits operating the lock, the Lee Decoder will pick up the new combination.

SPECIFICATIONS:

The Lee Decoder is made of the HIGHEST QUALITY materials. The tool is a precision instrument of solid brass, machined to a very close tolerance, but ruggedly built to stand years of hard use. A set of accurate guide keys are supplied to enable you to cut precise keys on your slot duplicator. No more need to purchase pre-cut keys for combination changes. The kit is contained in a handsome solid hardwood case 1½ X 4 X 7½ inches. Shipping weight 2 lbs.

$199.95



SIMPLE OPERATION:

The Lee Decoder is supplied to you with a booklet of easy to follow instructions. No guess work is involved—operates like a "go" and "no go" gage. This new tool will enable you to solve a safe lockout (using the above locks) in less than ten minutes, with a grand display of professionalism!

The new LEE DECODER KIT for Sargent & Greenleaf key locks is an absolute must for all progressive locksmiths and safe men. If you have ever drilled, pulled, punched or flame cut (and cussed at) a locked up safe or safe deposit box using the above locks, you will know what a BIG money-making potential this new tool has to offer you. When you leave the job, it is done; there is no drilling, welding, grinding, painting, or replacing of locks, lids or parts back at the shop. Your customer will appreciate the fast and efficient service you have given him.

One or two jobs will have paid for your new LEE DECODER. Guaranteed to work or your money gladly refunded.

2-75

LEE Industries

Locksmith Tools & Specialties

2136 N. ORANGE ST., STOCKTON CA. 95204

PHONE (209) 462-6991

DESIGNERS AND MANUFACTURERS OF THE FINEST LOCKSMITHING TOOLS

LEE DECODER

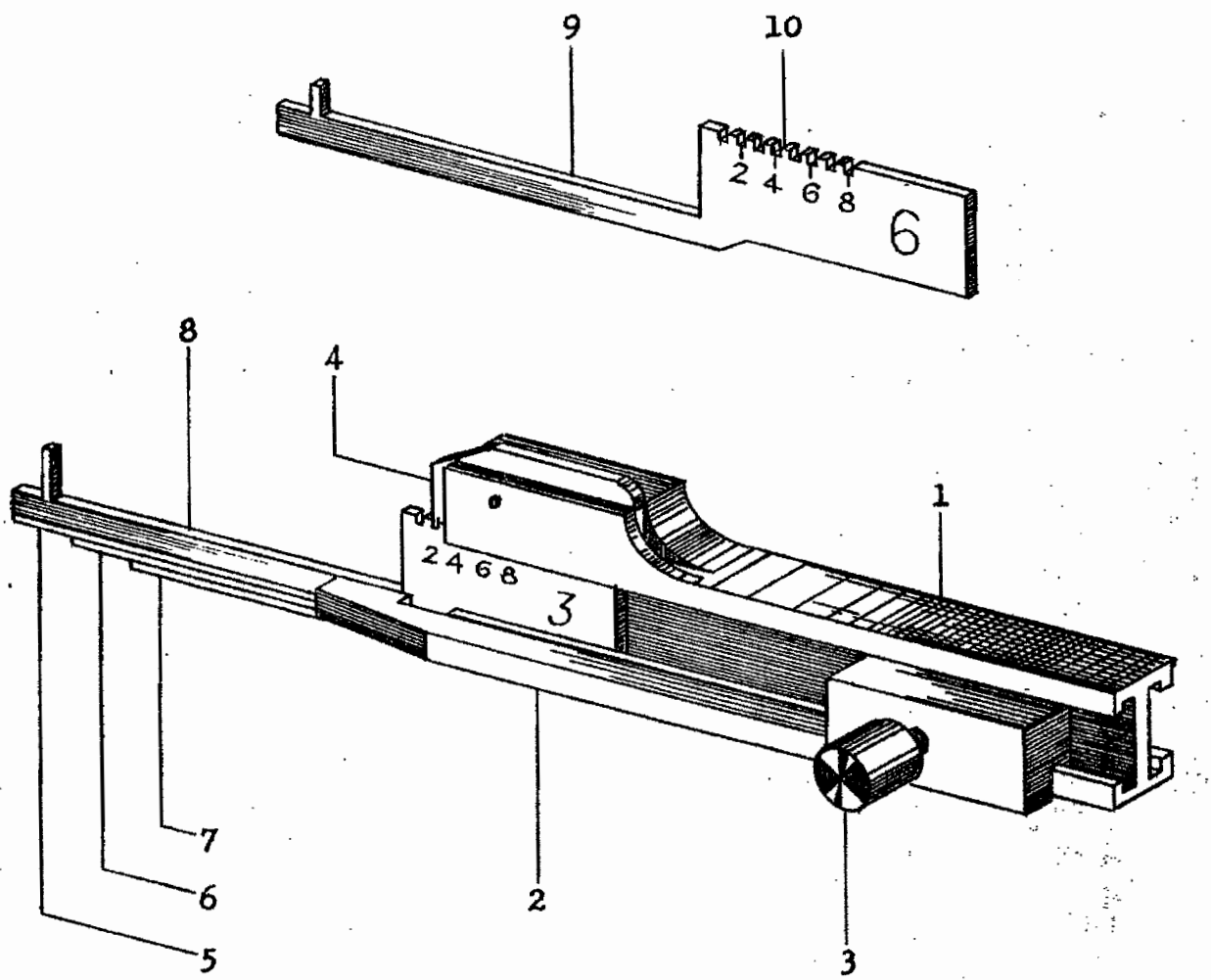
OPERATING

Instructions

LEE *Industries*

2136 N. ORANGE STREET
STOCKTON, CA. 95204
PHONE (209) 462-6991

LOCKSMITH
TOOLS
AND
SPECIALTIES



1	Decoder Body	6	Minus 2 Slide Shim
2	Slide Stop	7	Minus 3 Slide Shim
3	Slide Stop Thumb Screw	8	Gage Key Number 3
4	Gage Dog	9	Gage Key Number 6
5	Minus 1 Slide Shim	10	Tumbler Setting Notches

THE LEE DECODER

Before proceeding, read the following directions carefully and follow each step. It may be advisable to set up a lock with a combination known to you, to see if you are able to come up with the same combination using your new LEE DECODER.

Your LEE DECODER is a precision instrument, although ruggedly built, should not be abused. Undue turning pressure need not be used to obtain the correct readings. With a little care the LEE DECODER should serve you well for a lifetime.

In the event replacement parts are needed, write to:

LEE INDUSTRIES
2136 North Orange Street
Stockton, California 95204
Phone: (209) 462-6991

To decode the Sargent and Greenleaf 4160 - 4162 lock with the LEE DECODER, proceed as follows:

1. Marking the lock:

   A. Insert the tip of a key or small screw driver into the keyway and turn clockwise to its maximum.

   B. With a felt pen or other method, mark that position.

2. Synchronizing the decoder:

   A. Insert gage key number 3 into the decoder; set the gage dog at notch number 8 (8th tumbler).

   B. Loosen slide stop thumb screw.

   C. Insert the decoder into the lock.

   D. Tilt decoder forward and insert all slide shims into the lock.

   E. Push the gage key to the bottom of the lock.

   F. Push the slide stop up against the nose of the lock.

   G. Being careful that the slide shims are held flat against the back of the keyway, tighten the slide stop thumb screw. The decoder should now be synchronezed with the lock.

H. To remove the decoder from the lock, you must first retract all the slide shims before the gage key number 3 can be withdrawn; this follows throughout the whole decoding procedure.

3. Decoding the lock:

A. Set the gage key number 3 so that the gage dog drops into notch number 1; insert the decoder into the lock, so that the slide stop is up against the nose of the lock, and gently turn. If the keyway reaches the mark you have made, turn the decoder back to the starting position. Tilt the decoder slightly forward and insert the minus 1 slide shim and try again. If again the keyway reaches the mark, insert the minus 2 slide shim. If the keyway still reaches the mark, insert the minus 3 slide shim and try again. If this time the keyway does not reach the mark, then you will know that tumbler number one is set at depth number one, because you are using the gage key number three and the last combination that "goes" was 3-2=1

If on the last try the keyway still reaches the mark, the depth will be a 0 cut, since 3-3=0.

But let us suppose that on the very first try with the gage key number 3 alone (without any slide shims), the keyway did not reach the mark. Skip tumbler number 1 and proceed to number 2 and so on, skipping all the "no goes" with the gage key number 3 alone and recording all the "goes" as follows:

1	2	3	4	5	6	7	8
	3		1	1		0	2

B. Remove the gage key number 3 from the decoder. Insert the gage key number 6 and proceed as above to obtain readings on those tumblers missed by the gage key number 3.

Let us suppose that tumbler number 1 "goes" with the gage key number 6 alone, and also "goes" with the minus 1 slide shim inserted, but does not "go" with the minus 2 slide shim. You would know that tumbler number 1 is set at number 5 depth, since 6-1=5. If it "goes" with the minus

2 slide shim, the depth is at 4. The minus 3 slide shim need not be tried with the gage key number 6, since that would indicate a 3 depth, which you should have obtained with the gage key number 3.

Proceed in this manner, each time recording the lowest number you can obtain a "go" reading. When you have decoded all 8 tumblers, your chart should look like this:

1	2	3	4	5	6	7	8
5	3	6	1	1	4	0	2

At this point you have completed the decoding procedure; and you are now ready to cut the key.

4. Cutting the key:

With the LEE DECODER, you are supplied with a set of depth and space keys, consisting of 5 depth keys, numbered 1 through 5 and 2 space keys, numbered 1-3-5-7-9 and 2-4-6-8.

Let us use the above code for and example. The procedure to cut the key on a slot cutting duplicating key machine, is as follows:

A. Since number 1 is a 5 cut, place the space key number 1-3-5-7-9 in front of the depth key number 5, clampping both space and depth keys on the guide side of your key machine. Clamp your blank on the other vice and you are ready to cut the slot for the first tumbler.

B. Remove both the depth and space keys. For the second tumbler, the space key containing number 2 and the depth key number 3 should be used. Continue in this manner until all 8 tumbler positions have been cut.

When you have a 0 cut, just leave the width of the key blank uncut.

When the cut is to be a 6 depth, use the space key alone for that tumbler position, since the space key slots are all cut to the number 6 depth.

C. The Sargent & Greenleaf 4160 and 4162 lock has 8

change tumblers and there is a 9th gaurd tumbler, which is always set at the number 3 depth. Cut number 9 by using the space key alone.

D. The tip and heel of the bit must be cut to the size of any of the guide keys, otherwise the key will not turn in the lock.

Remember, each time the space and depth keys are changed, they must be in perfect register to get a good key. The blank stays in the vice throuthout the whole cutting operation.

If all the directions have been followed, you should now have a key that will open the lock you have just decoded.

5. If the key does not work:

A. Check to see if you have cut the key to the correct combination.

B. Check your key machine for correct adjustment.

C. Synchronize your decoder again and check all your readings. Sometimes when the lock is worn, the tip of the gage key may slip in-between the tumblers, giving a false "go". When that happens, you will not feel the spring tension as the gage key is being turned to the starting position.

Also, you may obtain a false "no go" when the tip of the gage key "hangs" on one of the divider plates. Be especially careful of this on the low number cuts. When that happens you will feel a "dead stop" with no feel of the spring. Change the position of the decoder slightly, back and forth, until you feel the gage tip slip in between the divider plates.

D. As each reading is taken, be sure to have the gage key (or slide shims) pressed firmly against the back of the keyway and the tip of the slide stop up aginst the nose of the lock.

If upon rechecking all of the forgoing and you find everything correct, and the key still does not work, the lock in question may be one of the very early models that gages one depth deeper than its true depth. Cut a new key one

depth less for every tumbler

If your readings are as follows:

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

Cut your new key as follow:

1	2	3	4	5	6	7	8
4	3	3	1	0	3	5	2

The gage key number 6 without any slide shims should always "go" in any tumbler position, unless one of the following conditions are present:

A. When a lock is badly worn or the tumblers improperly locked into position with the change key (if recently changed), the two parts of the tumbler may un-mesh and re-mesh so that the gate is now above the fence when the tumbler is at rest, making the lock impossible to open with any key whatsoever, unless the bottom portion of that tumbler can be forced up to re-engage into a higher notch, therefore lowering the gate. Such a tumbler will not "go" with the number 6 gage key alone.

B. The lock may be the old series, mentioned above, with one or more tumblers set at number 6 depth. These tumblers will read "no go" with the gage key number 6 alone.

When such "no goes" are encountered, a good plan would be to cut all depths one depth less as directed above.

6. If the key still does not work, and the lockout happens to be an IN-A-FLOOR SAFE, the best alternitive would be to drive the lock into the safe with a punch and shearing the two re-lock bolts with a LEE PULLER for IN-A-FLOOR SAFES.