INSTALLATION AND OPERATING INSTRUCTIONS
FOR
SABL (Stand Alone Battery Lock)

1. INTRODUCTION

Securitron's SABL is a self-contained, programmable, keypad operated lock system designed for use in areas which require authorized entry. The unit contains its own power supply (6 AA Alkaline Batteries) which provides an estimated life span of over 100,000 cycles in a year. The keypad is used for access code entry and also functions as the unit's programming platform. Its sleek design provides a professional looking, unobtrusive integration into a wide range of architectural applications and can be easily retrofitted to replace existing lockset hardware. Entry from outside the secured area is permitted by the keyed input of the proper access code or by key. Free egress is provided from the secure side of the door via the inside lever handle.

2. SPECIFICATIONS

Dimensions:
(Keypad)
    Inches: 4"W X 6-13/32"H X 3/4"D
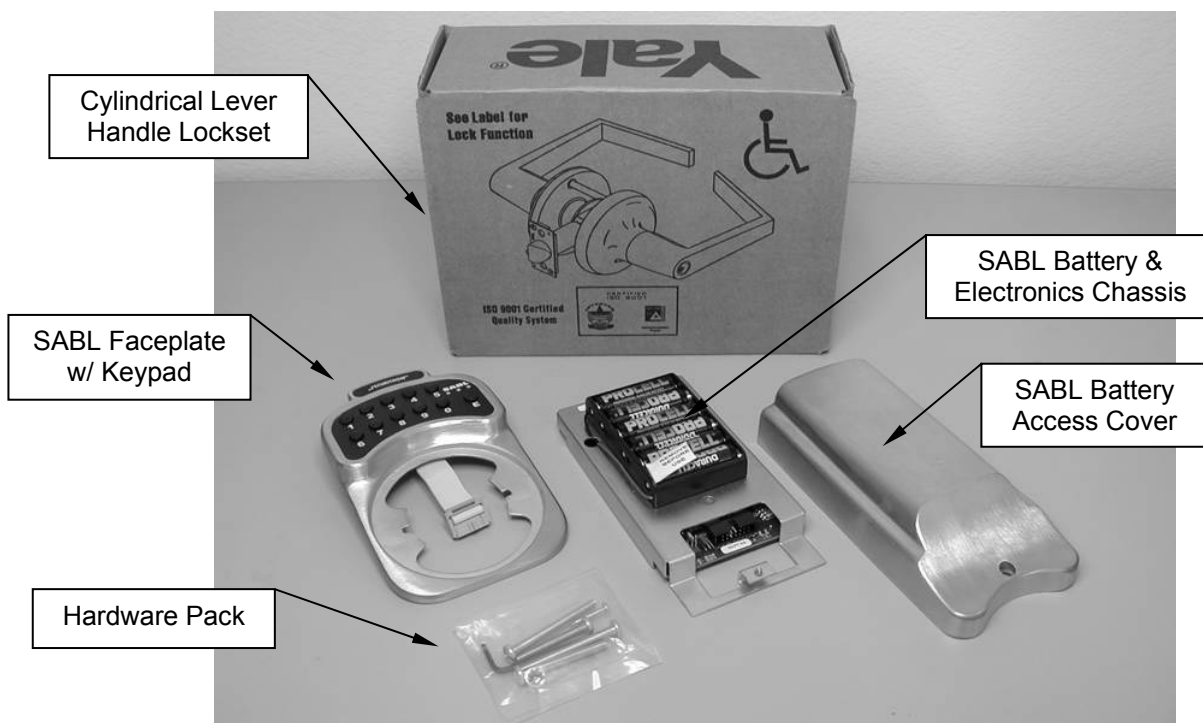   Millimeters: 102 W X 163 H X 19 D

(Battery Cover)
    Inches: 3-1/2"W X 7-29/32"H X 1-5/8"D
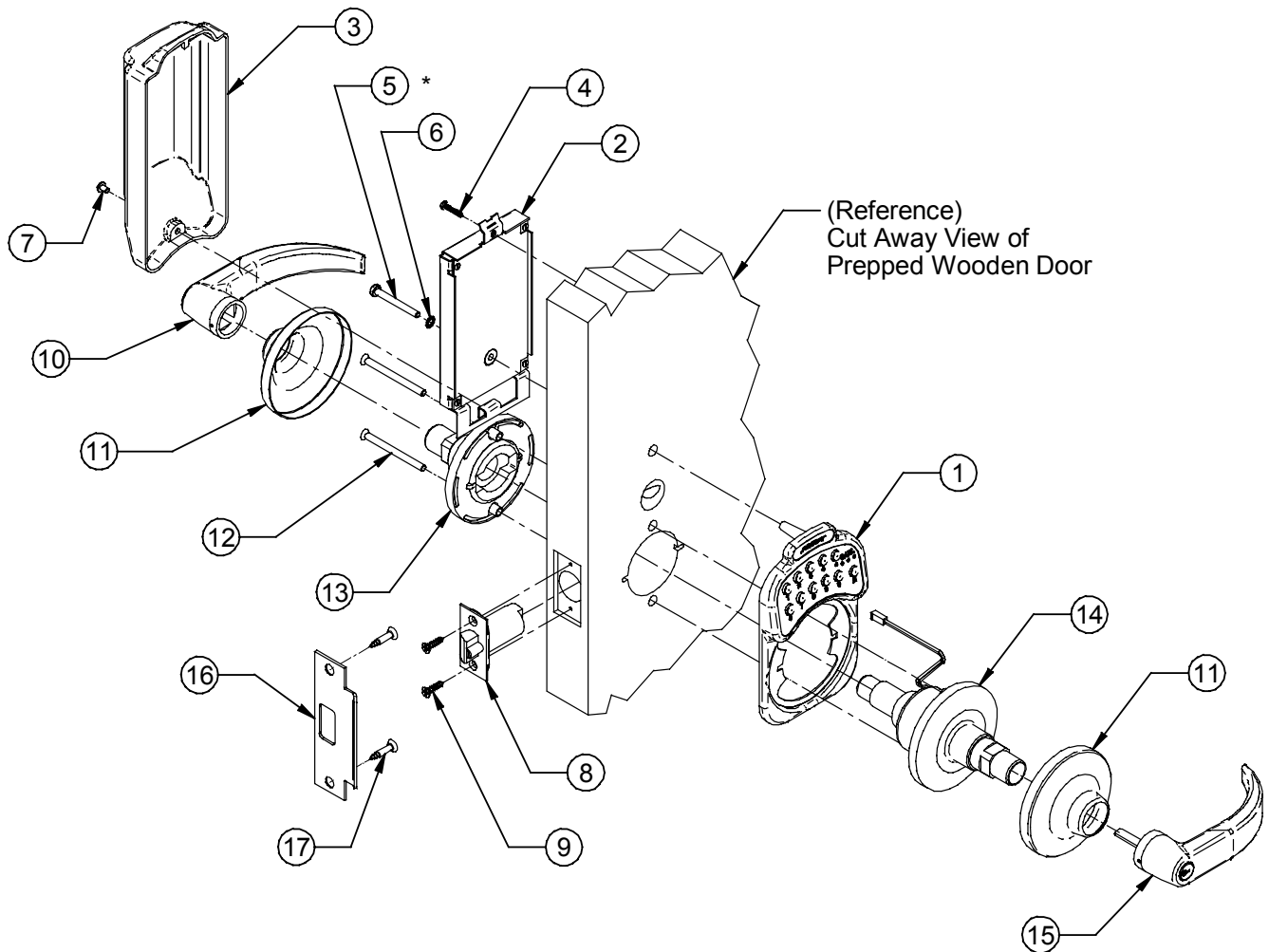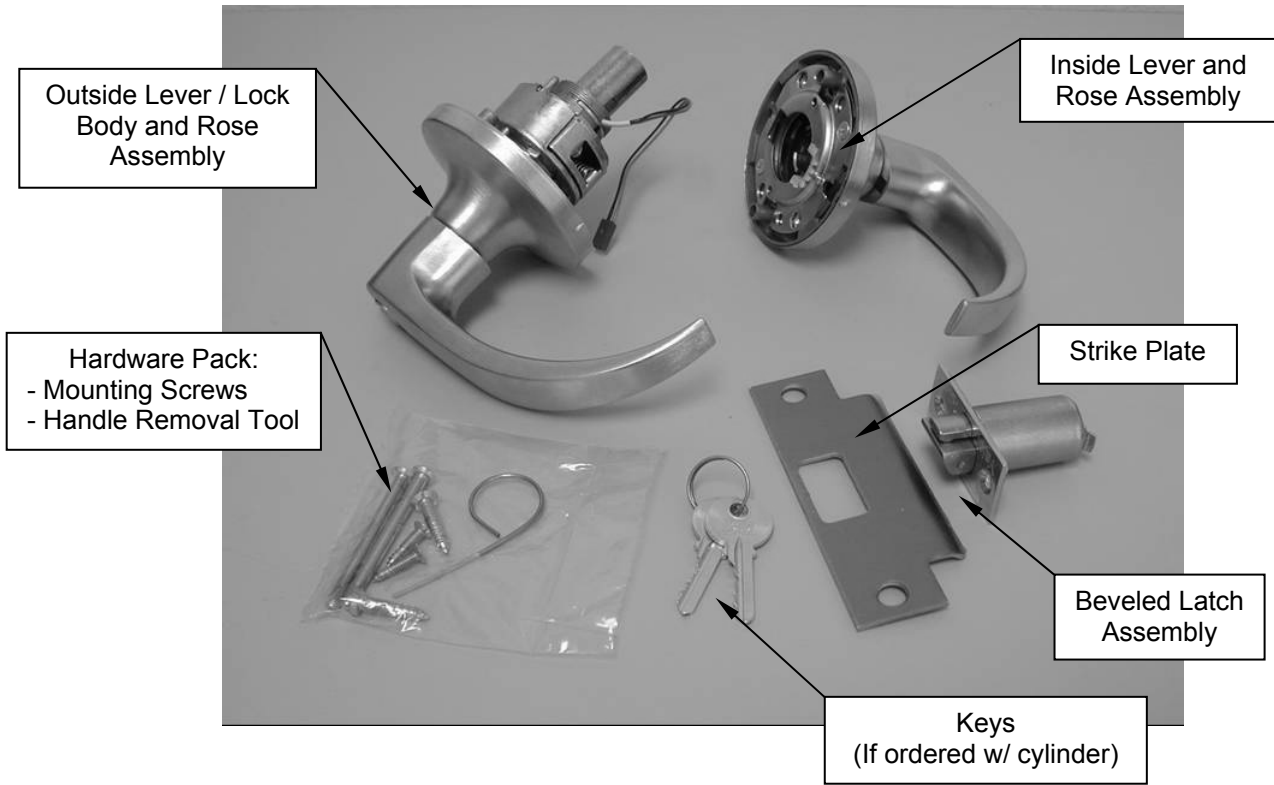   Millimeters: 89 W X 201 H X 41 D

Electrical:
    (6) AA Alkaline Batteries, 1.5 V

3. PRODUCT OVERVIEW

Upon unpacking this product, an inventory should be made to ensure that all the required components and hardware have been included. Along with these Instructions the SABL should include the following items:

- Cylindrical Lever Handle Lockset
- SABL Battery & Electronics Chassis
- SABL Faceplate w/ Keypad
- SABL Battery Access Cover
- Hardware Pack

PN# 500-19700
Rev. C, 8/07

Along with its installation instructions the provided cylindrical lockset should include the following:

Outside Lever / Lock Body and Rose Assembly

Inside Lever and Rose Assembly

Hardware Pack:
- Mounting Screws
- Handle Removal Tool

Strike Plate

Beveled Latch Assembly

Keys
(If ordered w/ cylinder)

(Reference)
Cut Away View of
Prepped Wooden Door

Figure 1
(Exploded View of Lock Installation)

Securitron SABL Parts List		
ITEM	**QTY**	**NOMENCLATURE/DESCRIPTION**
1	1	SABL Faceplate with Keypad
2	1	SABL Battery and Electronics Chassis
3	1	SABL Battery Access Cover
4	1	#6 X 3/4" Long (Phillips) Pan Head Screw
*5	1 (Each)	10-32 UNF X 1-3/4", 2", 2-1/4" & 2-1/2" Long (Phillips) Pan Head Screw
6	1	Lock Washer for 10-32 Screw
7	1	8-32 UNC X 1/4" Long Hex Socket Pan Head Screw

* Four (4) screw lengths are provided for use on different door thickness applications (See Section 5.2.2.).

Yale Cylindrical Lever Handle Lockset Parts List		
ITEM	**QTY**	**NOMENCLATURE/DESCRIPTION**
8	1	Beveled Latch Assembly
9	2	#8-8-32 (Combo) X 3/4" Long (Phillips) Flat Head Screw
10	1	Inside Lever Handle
11	2	Rose Scalp
12	2	10-32 UNF X 2-1/2" Long (Phillips) Flat Head Screw
13	1	Inside Rose Assembly
14	1	Outside Rose Assembly and Lock Body
15	1	Outside Lever Handle
16	1	Strike Plate
17	2	#12-12-24 (Combo) X 1" Long (Phillips) Flat Head Screw

4. RECOMMENDED TOOLS

1/4" Slotted and #2 Phillips Screwdrivers
Drill Motor
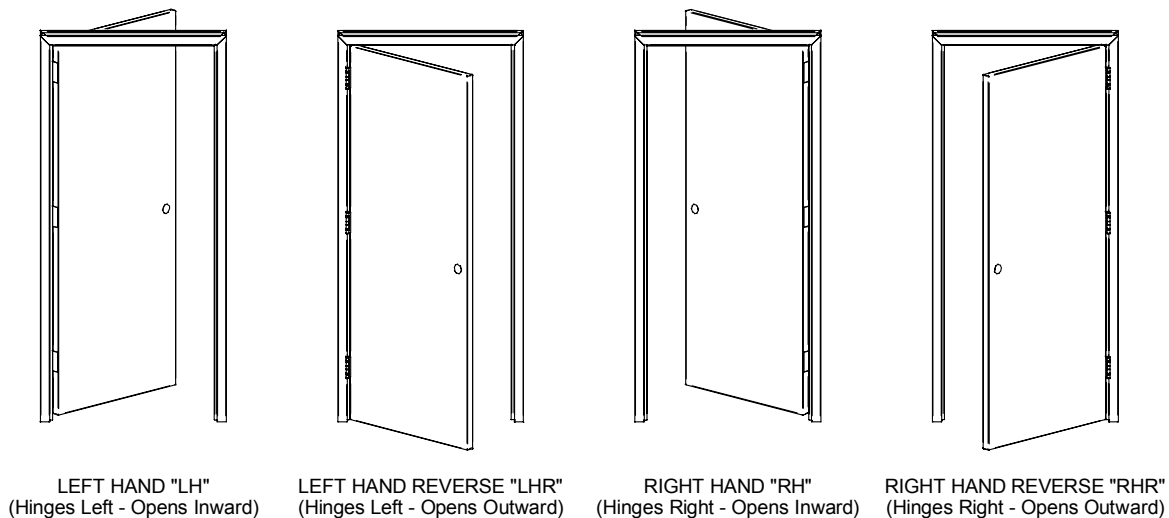Drill bits: 7/64", 1/8", 5/16", 11/32" and 3/8"
Needle-nose Pliers

Router (Optional) with 5/32" Diameter Bit
Hole Saw Bits: 1", 2-1/8"
Hex (Allen) Wrenches: 3/32" (Provided) & 1/8"

5. INSTALLATION INSTRUCTIONS

5.1. Pre-Installation Survey

It is recommended that an initial site survey be made of the area where the lock is to be installed. Prior to installation, determination of the optimal configuration to be used for the desired function to be performed should be made to include, but not limited to the following:

A) Verification of the handing requirement of the door to be secured by the device (**Figure 2** or the included Template may be used to determine the handing of a door).

B) Verification of the structural integrity of the mounting surfaces (i.e. door and frame).

LEFT HAND "LH"
(Hinges Left - Opens Inward)

LEFT HAND REVERSE "LHR"
(Hinges Left - Opens Outward)

RIGHT HAND "RH"
(Hinges Right - Opens Inward)

RIGHT HAND REVERSE "RHR"
(Hinges Right - Opens Outward)

Figure 2
(All views are shown from the unsecured (keyed) side of the door)

PN# 500-19700
Rev. C, 8/07
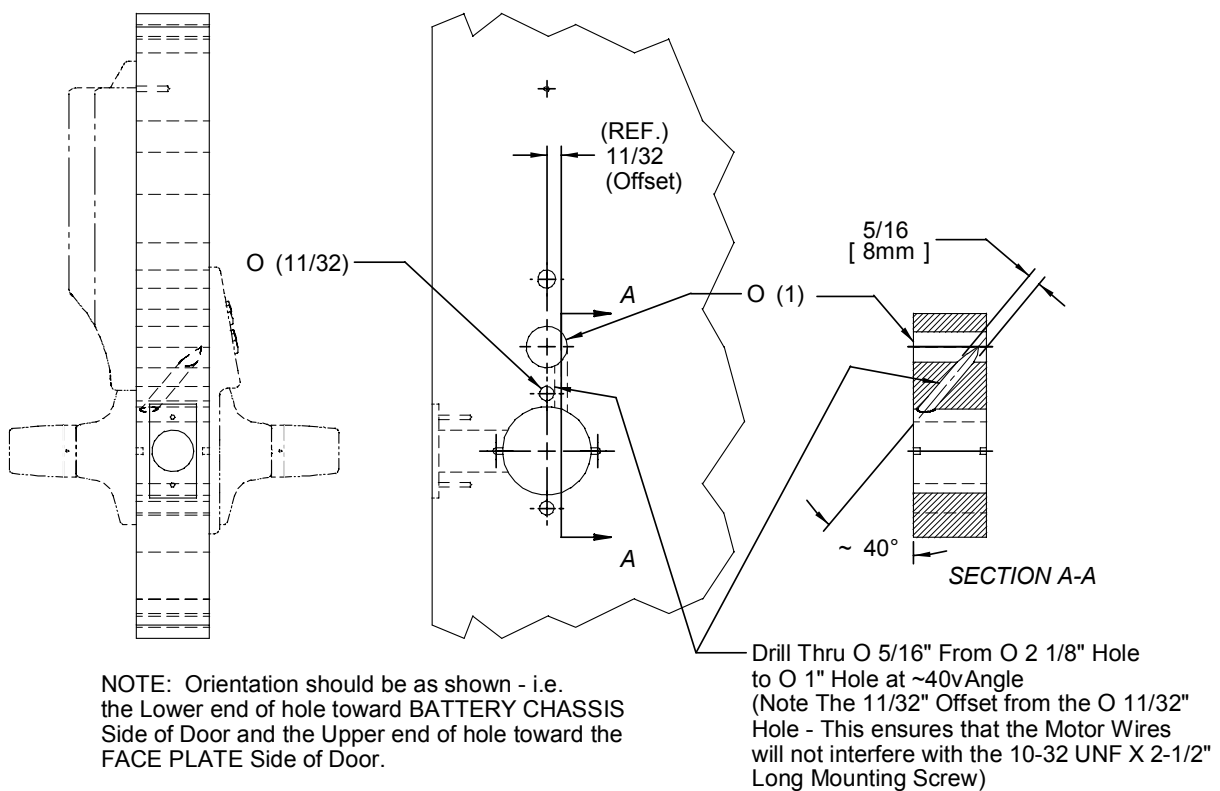
5.2. Installation

5.2.1. Door Preparation

Prepare the door as shown in **Figures 3** and **4** using the Template provided.

Note: Reference dimensions are in parenthesis – see Template for clarification.
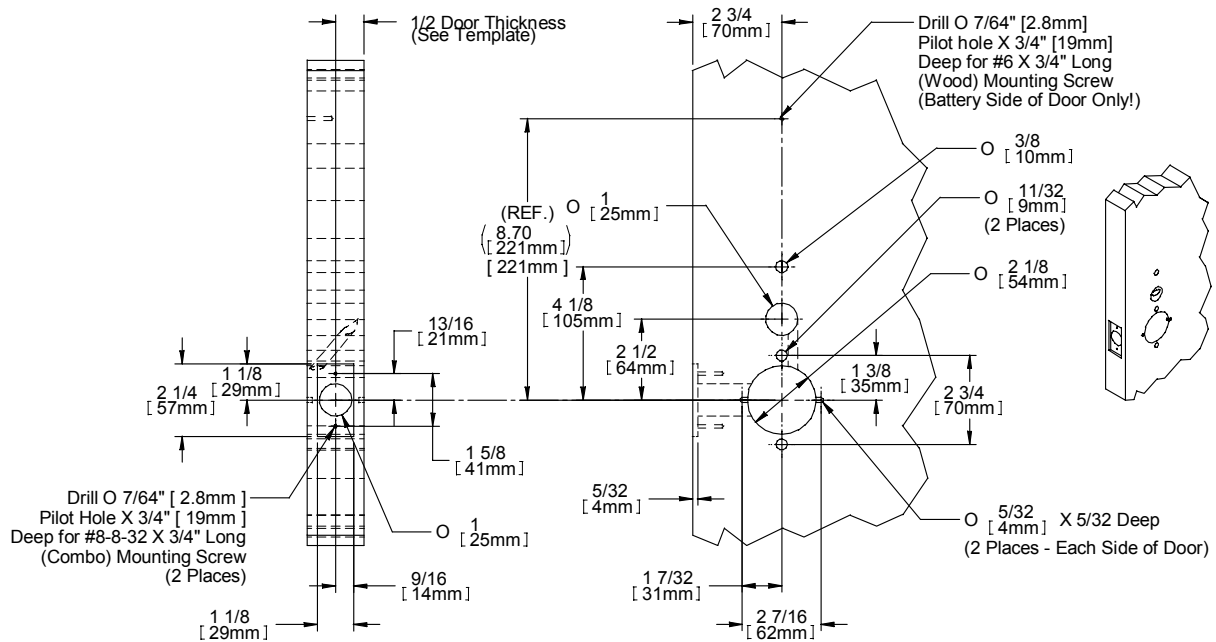
Figure 3

NOTE: Orientation should be as shown - i.e. the Lower end of hole toward BATTERY CHASSIS Side of Door and the Upper end of hole toward the FACE PLATE Side of Door.

Drill Thru O 5/16" From O 2 1/8" Hole to O 1" Hole at ~40v Angle (Note The 11/32" Offset from the O 11/32" Hole - This ensures that the Motor Wires will not interfere with the 10-32 UNF X 2-1/2" Long Mounting Screw)

Figure 4

5.2.2. Installation of SABL into Door

This section will provide step-by-step instructions for the installation of the SABL.

Please refer to the **Figure 1** (page 2) for an exploded view of the assembly of a SABL into a wooden door.

SABL Installation:

1. Ensure door has been prepared as described in the previous section.
2. Unpack the SABL from its packaging box.
3. Using a 3/32" hex (Allen) wrench remove the 8-32 UNC X 1/4" long hex socket pan head screw (**Item #7** of **Figure 1**) and remove the SABL battery access cover (**Item #3**) from the battery and electronics chassis (**Item #2**). Set the screw, cover and chassis aside for later use.
4. Unpack and disassemble the lockset.
   a. Remove the lockset from its packaging box.
   b. Using the handle removal tool provided, remove the inside handle of the lockset (**Item #10**).
   c. Remove the rose scalp (**Item #11**) from the inside rose of the lockset.
   d. Using a screwdriver, remove the two (2) screws (**Item #12**) holding the inside and outside rose assemblies together.

Lockset door thickness adjustment:

The lockset as provided is pre-adjusted for a 1-3/4" [44mm] thick door. If adjustment to accommodate a different door thickness is required, please determine the style of lockset (**"A"** or **"B"**) and refer to the accompanying instructions and illustrations to adjust the lockset as follows:
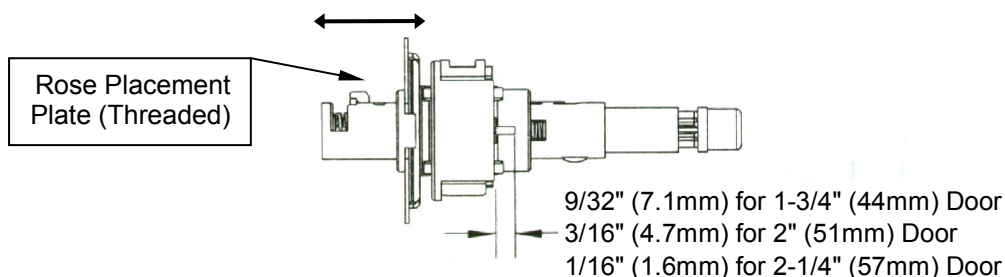
   A. Using a screwdriver, remove the two (2) screws holding the lock body to the outside rose as shown in **Figure 5**.
   B. Remove the lock body from the outside rose assembly.
   C. Extract the two (2) alignment pins from out of the lock body as shown in **Figure 5**.
   D. Adjust the lockset for proper door thickness as described for Style **"A"** or **"B"** – Step E.

(2) Screws

(2) Alignment Pins
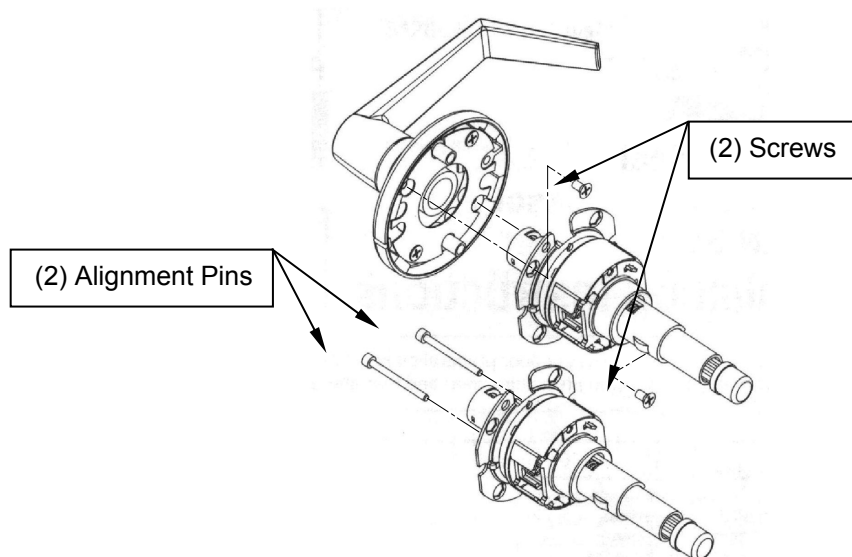
Figure 5

## Style "A" (lockset with threaded adjustment for door thickness):

   E. Rotate outside rose placement plate along the threaded body until the required distance is achieved as shown in **Figure 6**.

Rose Placement Plate (Threaded)

9/32" (7.1mm) for 1-3/4" (44mm) Door
3/16" (4.7mm) for 2" (51mm) Door
1/16" (1.6mm) for 2-1/4" (57mm) Door

Figure 6

Style "B" (lockset with slotted adjustment for door thickness):

E. Slide outside rose placement plate to one side to disengage it from the lock body. Position to desired door thickness slot as shown in **Figure 7** and reengage (slide) plate back to center.
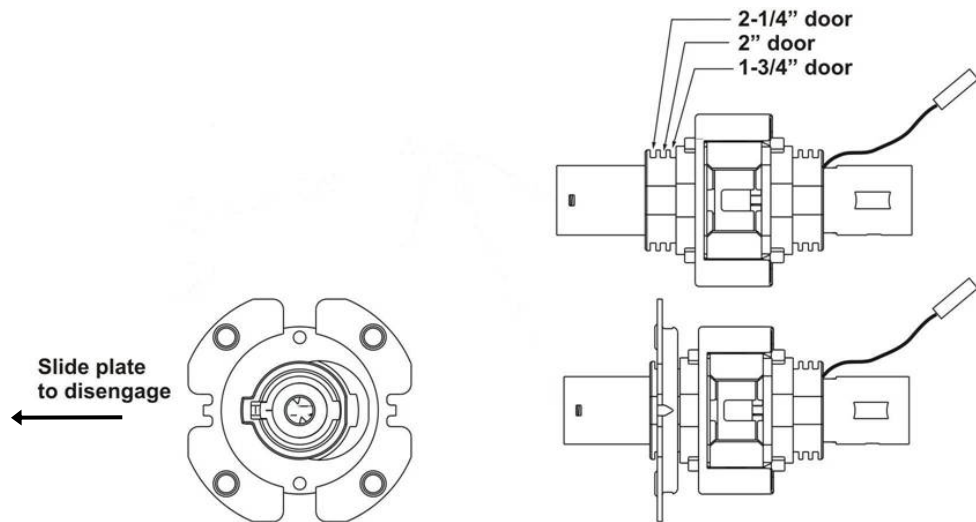
Figure 7

F. Insert alignment pins back into position.
G. Fasten lock body to outside rose with two (2) screws removed in step A.

5. Insert the latch assembly (latchbolt) (**Item #8**) into the hole prepared in the edge of the door. Insure the beveled edge of the bolt faces toward the strike plate (door frame) and loosely install using the two (2) mounting screws provided (**Item #9**). (**DO NOT** completely tighten the screws at this point).
6. While holding the SABL faceplate (keypad) (**Item #1**), insert the end of the outside rose assembly and lock body (**Items #11, 14 and 15 – assembled**) along with the lock motor wire connector through the lockset opening in the faceplate as shown in **Figure 8**.
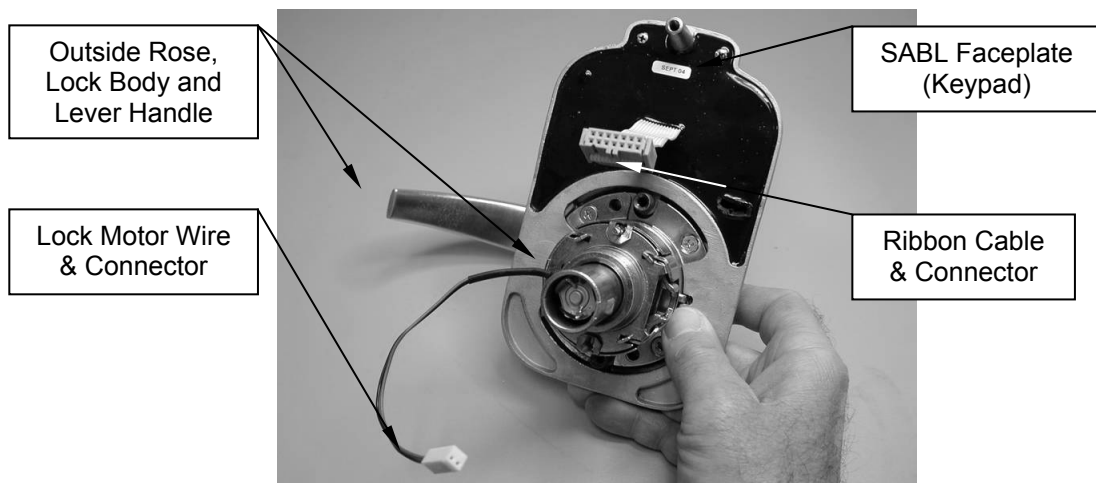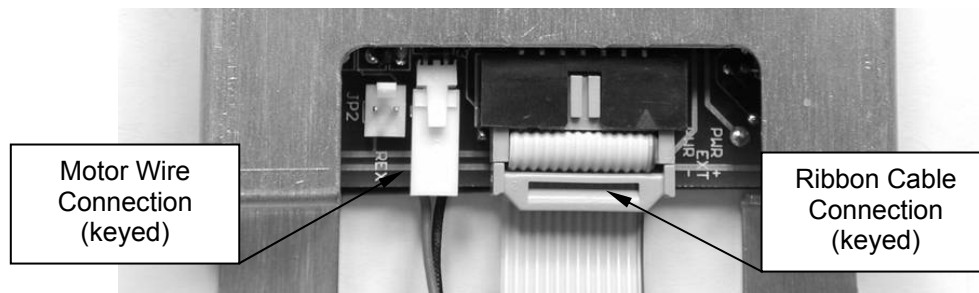

Figure 8

7. Holding this assembly together in one hand, feed the motor wire connector through the 2-1/8" diameter hole in the door from the front (keypad) side of the door.
8. Retrieve the wire connector from the inside (battery side) of the door and feed the connector back up and through the 5/16" diameter (diagonal) hole and into the 1" diameter hole above (see hole configuration – **Figure 4**).
9. Again, from the inside (battery side) of the door, retrieve the motor wire connector currently in the 1" diameter hole and using needle-nose pliers carefully pull it out through the hole to the battery side of the door.
10. Feed the keypad ribbon connector from the keypad side of the door through the 1" diameter hole and out the battery side of the door.

11. Position the SABL faceplate (keypad) and the lockset lock body/lever assembly against the face of the door centering the lock body through the 2-1/8" diameter hole and inserting the faceplate screw standoff (protrusion) into the 3/8" diameter hole in the door.
12. Ensure that the lock body frame hooks to the latch retainer legs and that the retractor engages the bolt tail of the latch assembly (**Item #8**). **DO NOT FORCE**. If lock body does not engage latch easily, check door for preparation errors.
13. Using the table below determine which of the four (4) 10-32 UNF (Phillips) pan head screws (**Item #5**) provided should be used:

Door Thickness:	Screw Length to use:
1-1/2" or less	1-3/4"
1-9/16 to 1-3/4"	2"
1-13/16 to 2"	2-1/4"
2-1/16" to 2-1/4"	2-1/2"

14. While holding the lock body/faceplate in place, position the battery and electronics chassis (**Item #2**) to the inside of the door. Insert the appropriate screw (**Item #5** as determined above) **with the lock washer** (**Item #6**) through the hole in the power chassis. Thread the screw into the threaded standoff of the faceplate until finger tight – **DO NOT** completely tighten at this point.
15. Using a screwdriver, install and tighten the upper #6 X 3/4" long screw (**Item #4**) through the upper mounting hole of the chassis.
16. Using a screwdriver, firmly tighten the 10-32 UNF (Phillips) pan head screw (**Item #5** - installed in step 14). **Ensure that the lock washer** (**Item #6**) **is installed** with the 10-32 UNF screw.
17. Connect the keyed ribbon cable end connector to the keyed terminal on the PC board of the battery power chassis. Then connect the keyed motor wire connector to its terminal receptacle on the PC board as shown in **Figure 9**.

Motor Wire Connection (keyed)

Ribbon Cable Connection (keyed)

Figure 9

18. Slide the inside rose assembly (**Item #13**) onto the lock body (**Item #14**). **Note:** The groove inside the rose assembly must line up with the drive lug on the spindle of the lock body as shown in **Figure 10**.

Drive Lug of Lock Body Spindle

Keyed Groove inside Rose Assembly

Figure 10

Note: Ensure that any excess motor wire is tucked into the 2 1/8" diameter hole in the door to prevent them from being caught/pinched under the inside rose assembly.

19. Fasten the inside rose assembly in place using the two (2) 10-32 UNF X 2-1/2" Long (Phillips) flat head screws provided with the lockset (**Item #12** – **Figure 1**).

Note: DO NOT over tighten the lockset screws – as this can compress the assembly enough to cause binding in the actuation.

20. Install inside rose scalp (**Item #11**) over the inside rose assembly (**Item #13**).
21. Install the inside lever handle (**Item #10**) over the end of the inside rose assembly (**Item #13**) and firmly snap the handle into place.
22. Using a screwdriver, tighten the two (2) screws (**Item #9**) holding the latch assembly (latchbolt) (**Item #8**) in place.
23. Test the handle actuation. If necessary, loosen screws as required, and adjust the assembly so that it functions smoothly.
24. Remove battery inhibitor tab from between the battery and terminal. (The unit will beep once to indicate power is available). At this point the unit should be programmed in accordance with Section 6.
25. After programming has been completed, install the SABL battery access cover (**Item #3**) over the battery power chassis by hooking the top tab of the cover onto the receptacle flange of the chassis, then using the 3/32" hex (Allen) wrench install the 8-32 X 1/4" long hex socket pan head captive screw (**Item #7**) at the base of the cover. **Note:** To obtain a proper fit of the access cover to the power chassis, the top receptacle flange of the chassis may be adjusted by slightly bending toward the door face (to tighten fit) or away from the door face (to loosen fit).

5.3. Strike Plate Installation

Note: A strike plate has been provided and is considered necessary for wear protection of the door frame and for the proper function of the lock mechanism.

5.3.1. Installation of Strike Plate on Door Frame

The following illustration (**Figure 11**) is an exploded view of the assembly of a strike plate onto a door frame:

(Reference)
Cut Away View of
Prepped Door Frame
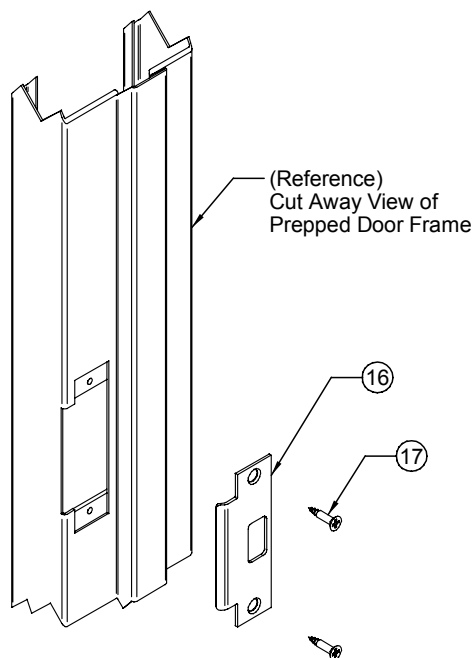
Figure 11

Strike Plate Installation:

1. Place Strike Plate (**Item #16**) into position on prepped door frame.
2. Using screwdriver secure the strike plate in place on the door frame using the two (2) screws provided (**Item #17**).

6. PROGRAMMING

The SABL has ten numbered keys and an "E" key which is used for several functions. Each of these keys is read separately by the unit, so the SABL is a **true 11 digit access device**. This provides excellent security against a code being guessed. Also, the SABL employs non-volatile EEPROM memory so that all programming is retained in a power failure and during battery replacement.

Another point to note is that all SABL codes will operate the unit when their sequence is entered regardless if other incorrect digits were entered before. For instance, if the correct code is 2-2-6-7, the unit will operate if 8-2-2-6-7 is entered. An exception to this is if a total of 16 wrong digits are entered. In that case, an **alarm function** comes into play. The keypad will lock itself out for 15 seconds and the beeper will sound continuously. This feature discourages attempts to guess the code.

Before learning all programming options for the SABL, you **should decide how you want the unit to be used**. Then learn only the appropriate programming for that use. This simplifies the task of operating the unit and cuts down on unneeded service calls.

The programming questions to ask are: do you want a "**fixed**" code that will either never be changed or changed only rarely? Or do you want **regular code changes from the keypad**? This issue depends on the amount of security called for in the application. Finally, do you want **multiple codes**? The SABL supports 55. The purpose of multiple codes is to assign different codes to individuals or groups. Then if a code needs to be changed, the other individuals or groups need not go to the trouble of learning a new code. This is a convenience issue.

6.1. Fixed Programming

Employ fixed programming in a situation where the end user is not likely to ever change the code, or at least that changes would be rare. Fixed programming can be used in lower security "traffic control" applications, as the longer the code remains unchanged, the greater the risk that an unauthorized person will be able to learn it.

The SABL makes it simple for you to program the unit in this "fixed" way. You will utilize a push button set, single code called the **"Hard Code".** With power applied to the unit, **note that the yellow LED is on and will remain on for 5 seconds (after the last pressed key)**. This signals that all code memories are empty. This is important as you don't want any unknown codes present in the unit. If the yellow LED does not illuminate after a key is pressed, see Section 6.5 for the procedure to clear any (and all) existing codes.

Once you have confirmed the yellow light indication on the keypad, remove the battery cover and press the button on the CPU board marked "HARD" for about one second. Returning to the keypad, you will see the yellow LED flashing slowly (about once per second). This indicates "hard programming mode". Within 30 seconds, simply enter your code from **two to seven digits** (you can't use the "E" key but repeating digits are OK). If you wait longer than 30 seconds to start your code entry, the "programming window" will terminate and you will have to press the "HARD" button again. In general, longer codes provide more security but are less convenient to remember and enter. However, many users prefer seven digit codes as they can be phone numbers, which are easy to remember. Do not pause while you are entering the code **as any time there is more than a five second gap between keys being pressed, the unit will stop reading the sequence**. Note that a successful button press is echoed by a beep and a flash of the green LED. When you have completed entering your code, hit the "E" key and you should see the red LED display **two pulses within a second**. If you don't hit the "E" key, your code will be accepted anyway but it will take five seconds to see the two red flashes. If you have selected a seven digit code, the two red flashes will occur immediately as the digit limit has been reached. The two pulses signal that your code has been accepted. If you get a **single one second long red pulse**, your code has not been accepted. Pressing one key and waiting for over 5 seconds, for example, would be interpreted as a disallowed single digit code.

If you get the single red flash, press the Hard Code button again and you can attempt to re-enter a successful code. Once you get the two red flashes, re-enter your code and the door should open. "Fixed" programming is complete. Should you ever want **to change the code**,

just press the Hard Code button on the CPU board again and repeat the procedure described above.

Below we show a step by step summary.

- *Power up unit; confirm 5 second yellow LED indication (after any key is pressed).*
- *Press the "HARD" button on the CPU board for one second.*
- *Confirm slow flashing yellow LED.*
- *Within 30 seconds of pressing Hard Code button, enter a 2-7 digit code.*
- *End your entry with "E" key or wait 5 seconds.*
- *Note two (2) red LED flashes for confirmation.*
- *Re-enter code (door should open).*

6.1.1. "Masterkey" Use of the Hard Code

The primary use for the Hard Code is to allow simple single code "fixed" operation as is described in Section 6.1. The Hard Code can only be set or changed from the "HARD" button in the CPU board. It is deliberately kept separate from all programming functions. Another use for it, however, is as a "masterkey" code. For example, consider a facility with multiple SABL's under the control of different departments. Each department might want to employ different Program and User codes to restrict cross access but a common Hard Code could be established for all of the units so that security management personnel could enjoy universal access. This Hard Code will never be lost from keypad operations (the CPU board has to be accessed).

6.2. Keypad Changeable Programming

In this application, two (or more) codes are programmed into the SABL. The first, called the **Program Code** acts as a **password** which allows changing the User codes. It is the User codes which are employed regularly to gain access. Knowledge of the Program Code should be restricted to security management as its only use is to change the User codes or different programming options. With this method of operation, higher security is obtained because the end user can change the User codes regularly or at any time they feel it has been compromised.

With battery power applied to the unit, **note that the yellow LED comes on for 5 seconds after any key is pressed**. This signals that all code memories are empty (you don't want any unknown codes present). If the yellow LED does not come on, see Section 6.5 for the procedure to clear any (and all) existing codes.

Once you have confirmed the 5 second yellow light indication on the keypad, remove the battery access cover (if it is not already removed) and press the button marked "PRGM" on the CPU board for about one second. Returning to the keypad, note the yellow LED flashing rapidly (about three times a second). This indicates "program mode". Within 30 seconds, enter the **prefix 0-0** and then **your Program Code** from **five to seven digits** (you cannot use the "E" key but repeating digits are OK). If you wait longer than 30 seconds to start your code entry, the "programming window" will automatically terminate, so press the "PRGM" button again. Do not pause while you're entering all these digits **as any time there is more than a five second gap between keys being pressed, the unit will stop reading the sequence**. Note that a successful button press is echoed by a beep and a flash of the green LED. When you have completed entering your Program Code, hit the "E" key and you should see the red LED display **two (2) pulses within a second**. If you don't hit the "E" key, your code will be accepted anyway but it will take five seconds for the two red flashes to come. If you have selected a seven digit code, the two red flashes will occur immediately as the digit limit has been reached. The two pulses signal that your code has been accepted. If you get a **single one second long red pulse**, your code has not been accepted. Pressing fewer than 5 keys, for example, would be would be interpreted as a disallowed Program Code.

You'll note that after the two confirming red flashes are seen, the unit automatically returns to program mode (rapid yellow flash). You could exit program mode by either hitting the "E" key or waiting 30 seconds, but you now want to program your User codes**.** Immediately enter the **prefix 0-1** and then **your user code** from **two to seven digits**. When you see the two confirming red flashes, exit program mode by hitting the "E" key or waiting 30 seconds. If you get the single "error" pulse, note that the unit will automatically return to

program mode and you can attempt to re-enter your user code. If you continuously get the error signal, refer to the troubleshooting section which explains all the possible reasons for a code not being accepted.

After you've completed your entries, **test your User and Program Codes by entering them**. The User code should open the door. Entering the Program Code followed by the "E" key should cause the yellow LED to flash rapidly (program mode). Exit the program mode by hitting the "E" key. Below we show a step by step summary of programming the two codes.

- o *Power up unit; confirm 5 second yellow LED (after any key is pressed).*
- o *Press the "PRGM" button on the CPU board for one second.*
- o *Confirm rapid flashing yellow LED.*
- o *Within 30 seconds of pressing PRGM button, enter prefix 0-0 followed immediately by a 5-7 digit Program Code.*
- o *End your entry with "E" key or wait 5 seconds.*
- o *Note two (2) red LED flashes for confirmation, note rapid yellow flashing LED returns.*
- o *Enter prefix 0-1 followed immediately by a 2-7 digit User code.*
- o *End your entry with "E" key or wait 5 seconds.*
- o *Note two (2) red LED flashes for confirmation, note rapid yellow flashing LED returns.*
- o *Press "E" key to terminate program mode or wait 30 seconds.*
- o *Re-enter User code (door should open).*
- o *Re-enter Program Code followed by the "E" key (yellow LED should rapidly flash); terminate with "E" key.*

6.2.1. Changing The User and Program Code from the Keypad

This is the day to day procedure that should be **taught to the end user**. Normally the end user will not access the CPU board. Everything should be done from the keypad. To change the User code:

- o *Enter Program Code, followed by the "E" key, note rapid yellow flashing LED (program mode).*
- o *Enter prefix 0-1 followed immediately by a new 2-7 digit User code.*
- o *End your entry with "E" key or wait 5 seconds.*
- o *Note two red LED flashes for confirmation, note rapid yellow flashing LED returns.*
- o *Press "E" key to terminate program mode or wait 30 seconds.*
- o *Re-enter new User code (door should open).*

The Program Code should need changing much less often. To do it:

- o *Enter old Program Code followed by the "E" key, note rapid yellow flashing LED (program mode).*
- o *Enter prefix 0-0 followed immediately by a 5-7 digit new Program Code.*
- o *End your entry with "E" key or wait 5 seconds.*
- o *Note two red LED flashes for confirmation, note rapid yellow flashing LED returns.*
- o *Press "E" key to terminate program mode or wait 30 seconds.*
- o *Re-enter new Program Code followed by the "E" key (to test it), note rapid yellow flashing LED returns.*
- o *Press "E" key to terminate program mode or wait 30 seconds.*

The logic behind this procedure is as follows. All programming for the SABL starts with putting the unit into program mode (except entering the single Hard Code). The unit is put into program mode by either pressing the "PRGM" button on the CPU board or entering a valid Program Code. When you enter a Program Code, however, **you have to terminate the sequence with the "E" key.** This is for a little extra security and ensures that the program mode is not accessed by mistake. The prefix 0-0 causes the code which follows to be stored as the Program Code. The prefix 0-1 causes the code to be stored as a user code.

6.2.2. Adding Multiple User Codes

The SABL has memory locations for up to 59 User codes. These memory locations include four (4) codes reserved for Passage & Lockout Modes (see Section 6.3). This allows separate codes for individuals or groups which is a benefit because when one code is changed (usually owing to a security worry), the people who use the other codes don't have to learn a new code. To program additional User codes, you follow the procedures described above for setting the User code in memory location 01 but you employ memory locations 02 through 59. For example, once the unit is in program mode (rapid yellow flash), entering 0-2 followed by a code sequence will enter a second User code. The same is true when you enter prefixes 0-3, 0-4 up to 5-5. When you're programming multiple User codes, note that you can enter them one right after another. When a code is accepted, the unit signals by two (2) red flashes. It then automatically goes back into program mode and another code can be immediately entered without exiting program mode. Be sure to **test all the codes** you have entered before you consider programming complete. You can **individually erase any code** (including the Program Code) by entering program mode, pressing the prefix for the code (00-55) and then pressing the "E" key or waiting 5 seconds until you get the **two (2) red flashes**.

6.3. Passage and Lockout Codes

6.3.1. Passage Mode

The SABL may be programmed to operate in passage mode. During passage mode operation, a valid passage code will release the lock indefinitely. In order to re-secure the lock, a valid passage code would have to be re-entered. Passage mode is generally used in an application where the door is released all day during business hours by entering a passage code and then secured after business hours by re-entering a passage code.

Previously we stated that the SABL could hold up to 59 user codes. Two of these codes have been set aside for passage mode operation. The user locations for the passage codes are **56** and **57**.

NOTES:
1. When programming, a double flash of the red LED will confirm the acceptance of the code.
2. When the **8-8** command is entered during programming, passage codes are deleted along with all other user codes and the SABL is automatically taken out of passage mode.

6.3.2. Lockout Mode

The SABL may also be programmed to operate in **lockout mode**. During **lockout mode** no valid entry codes, passage codes or hard code will operate the lock. Entering a lockout code once will disable all entry codes. Entering a lockout code a second time will re-enable all entry codes. A typical application for lockout mode might be to lock out entry codes so that employees have no access after business hours.

Two user codes have been set aside for lockout operation. The user locations for the lockout codes are **58** and **59**.

NOTES:
1. When programming, a double flash of the red LED will confirm the acceptance of the code.
2. When the **8-8** command is entered during programming, lockout codes are deleted along with all other user codes and the SABL is automatically taken out of lockout mode.

6.4. Subset Codes

When you recognize that the SABL accepts **multiple codes of different lengths**, it is possible that one code will be a subset of another. For example, suppose you programmed "1-3-3-5-8" and then programmed "3-3-5" as another code. When you try to enter 1-3-3-5-8, you can't complete the entry because when the unit sees the sequence 3-3-5, it will

operate. A real problem could occur if a User code was a subset of the Program Code. The unit could not be put into program mode from the keypad.

The SABL, however, avoids this problem by **rejecting any code that is a subset of another code in memory**. It signals this rejection by showing the single red (error) flash instead of the two-flash confirmation signal. You'll get the same error if you try to enter a **duplicate code**. If you are trying to enter a code and see it rejected by the error signal, carefully check your list of other codes. You are probably attempting to enter a subset code. If the security procedures of the installation allow individuals to choose their own codes without reference to a list, the users need to be advised that they may have to try alternate codes if the one they prefer is rejected as a subset. Other typical reasons for code rejection are covered in the troubleshooting section at the end of the manual.

6.5. Clearing All Codes

As previously mentioned there is a procedure to follow **if you don't get a 5 second yellow light after power up (or by pressing any key)**. The absence of the yellow light means that for some reason, the unit already has one or more codes in memory. You must erase these other codes to be certain that the unit will operate only on the codes you plan to enter. Follow the steps shown below.

- *Press the "HARD" button on the CPU board for one second.*
- *Confirm slow flashing yellow LED*
- *Press the "E" key (yellow flashing stops). Confirm two (2) red flashes*
- *Press the "PRGM" button on the CPU board for one second.*
- *Confirm fast flashing yellow LED*
- *Enter 0-0 followed by the "E" key (or wait 5 seconds). Confirm two (2) red flashes.*
- *Enter 8-8 followed by the "E" key (or wait 5 seconds). Confirm two (2) red flashes.*
- *Extinguish the fast yellow flashing LED by pressing the "E" key or waiting 30 seconds.*

This procedure has erased any and all codes that were present (including all user codes). The yellow LED should come on for 5 seconds after any key is pressed. Return to Section 6.2 for keypad changeable programming.

NOTE: If the yellow LED does not come on for the 5 seconds, repeat the above procedure. If you still do not get the yellow LED indication there is probably a problem with the unit – contact Securitron.

6.6. Deleting Codes (Separately)

Any code can be deleted by "calling it up" and hitting the "E" key rather than entering a new code (which would over-write the old one). Alternately, if you don't hit the "E" key but don't enter a new code, the unit will time out and still delete the code.

To **delete the Hard Code**, press the "HARD" button on the CPU board, confirm that you are in hard program mode (slow yellow flash) and press the "E" key or wait 30 seconds.

To **delete the Program Code**, put the unit into program mode (fast yellow flash) from the "PRGM" button or from the existing Program Code. Enter 0-0 and press the "E" key or wait five seconds. You'll see the two red confirmation flashes. You'll need to then press the "E" key again to exit program mode or wait 30 seconds. Note that it can be considered logical to operate without a Program Code. It is more difficult to put the unit into program mode (it can only be done from the "PRGM" button in the CPU board) but User codes can still be changed and some users may feel that this is a more secure code changing procedure.

To **delete any individual User code**, put the unit into program mode (fast yellow flash) from the "PRGM" button or from the existing Program Code. Enter the **prefix** for the code you wish to delete (01 - 59) and press the "E" key or wait five seconds. You'll see the two (2) red flashes. You'll then need to press the "E" key again to exit program mode or wait 30 seconds.

An alternate method to **delete any individual User code when you know the actual code but not the two digit prefix** is as follows**.** Put the unit into program mode (fast

yellow flash) from the "PRGM" button or from the existing Program Code. **Enter 7-9** followed immediately by the complete code you wish to delete. If it's a seven digit code you'll immediately see the two red confirmation flashes. Otherwise press the "E" key or wait five seconds. If you get the single red error flash, it is probably because the code you thought was in memory was not. You'll then need to press the "E" key again to exit program mode or wait 30 seconds.

To **delete all User codes**, there is a special prefix. Put the unit into program mode (fast yellow flash) from the "PRGM" button or from the existing Program Code and **enter 8-8**. This special prefix will immediately delete all User codes and you'll immediately receive the two (2) red flashes. There is no need to hit the "E" key as it is used for early termination of sequences that don't have a fixed length (typically codes). 8-8 as a prefix is a complete command. You will then need to press the "E" key to exit program mode (or wait 30 seconds). Deletion of all codes is typically done when you have lost accurate knowledge of what codes are in memory. It's best to delete them all and program a new set.

6.7. Setting the Time Range

The SABL will release the lock it controls for a **default time of 3 seconds** when a correct User code is entered. This can be changed to any value from **1-9 seconds** by entering a special programming sequence. With the unit in program mode, **enter key 9** followed by any **two digit** entry from **01 to 09**. You will then see the double red flash immediately. If you get the single "error" flash, you probably entered only one digit. Then exit program by hitting the "E" key or waiting 30 seconds. Enter a correct User code to test that the changed time is working.

7. CHANGING LED AND BEEPER OPERATION

As delivered, the SABL echoes key presses by a short beep and a short flash of the green LED. The red LED flashes once every second to show that the door has been released and also to confirm or reject programming commands (two flashes confirm; one rejects). As an issue of individual preference, these operating defaults can be changed.

Some customers want to **silence the beeper** as its sound can be considered annoying in some environments. . To **set this change**, put the unit into program mode and **enter 7-1**. You will see the two flash confirmation. Exit program mode by hitting the "E" key or waiting 30 seconds. This function will override the one discussed in the previous paragraph.

To **return the beeper to factory set default**, put the unit into program mode and **enter 7-2**.

You can also **reverse the red/green LED logic** so that the green light flashes once every second as the red light did, and visa versa. To **set this change**, put the unit into program mode and **enter 7-3**. You will see the two flash confirmation. Exit program mode by hitting the "E" key or waiting 30 seconds. If you make this change, note that every time this manual discusses something that the red or green LED does, it will be reversed.

To **return the red/green LED logic to factory set default**, put the unit into program mode and **enter 7-4**.

8. BATTERY LOW POWER INDICATION AND REPLACEMENT

The SABL, **when battery power becomes low**, will echo the press of a key (single beep) with **two (2) very quick short beeps and a short flash of the LEDs**. At this point the unit should still function properly for about **another 5,000 cycles** before the batteries must be replaced. Once the first key of a sequence is pressed and is followed by its 2-beep and the LED indication, the rest of any code input (key presses) will give the normal single beep + LED indication.

When the batteries are at their lowest operational power, the SABL will echo a key press (single beep) by the same 2-beep indication described above. This however will happen after **every successive press of a key** and there will be **NO LED indication**.

When replacing the batteries, be sure to use a good quality AA Alkaline type. Also, ensure that each battery is inserted into the holder in the correct polarity (+) / (-) orientation and verify that each end of the battery is making good contact with the terminals of the holder.

9. APPENDICES

A. Command Summary

WITH THE UNIT IN PROGRAM MODE (FAST YELLOW FLASH):

00 followed by 5-7 digits sets Program code.
01 followed by 2-7 digits set first User code.
02-followed by 2-7 digits sets second User code.

Additional User codes can be set up to the prefix 55 (total 59 User codes).
56-57 followed by 2-7 digits sets Passage Mode.
58-59 followed by 2-7 digits sets Lockout Mode.

71 will silence beeper at all times.
72 will return beeper to factory set.
73 will reverse light logic (red to echo, green to show door is open).
74 will return light logic to normal.
79 is alternate code delete. Any valid code entered directly after the 79 command will be deleted.

88 will erase all user codes (not Program or Hard Code).
89 will return all functions (including timer) to factory set. Codes are unchanged.

Pressing 9 when in program mode sets the timer. Two digit codes must be entered from 01 to 09 seconds. Default is 3 seconds.

B. Outside Lever and Cylinder Information – Yale Lockset

The following illustrations are provided as general reference information regarding the Yale outside lever and cylinder assembly.

Please refer to the Yale lockset Installation Instructions included with your SABL for more detailed information or visit *www.yalelocks.com* to obtain .pdf files of installation documentation.

Yale Non-Removable Core Cylinder
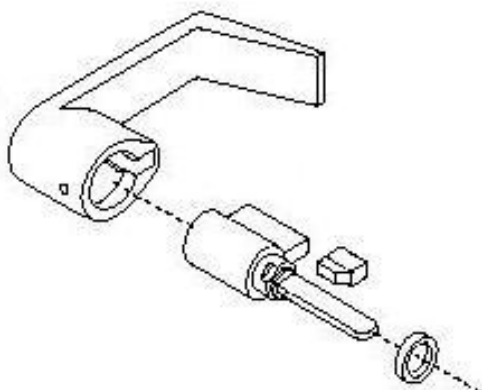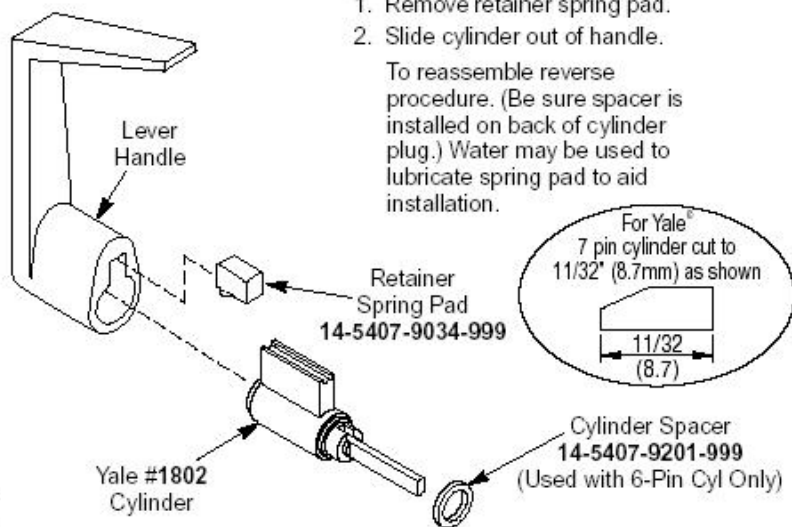

To Remove Cylinder Handle

1. Insert key and rotate clockwise 70°.
2. Depress retainer with tool provided.
3. Slide lever off lock. (Also applies to inside lever of 5417N, 5418LN, 5421LN and 5430LN lock functions.)
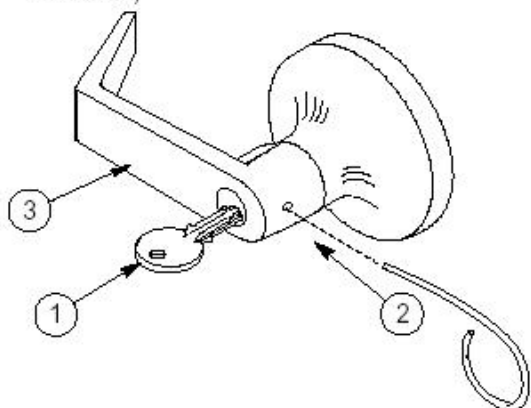
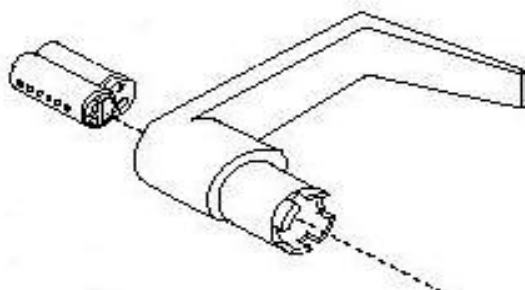### To Remove Cylinder from Handle

1. Remove retainer spring pad.
2. Slide cylinder out of handle.

To reassemble reverse procedure. (Be sure spacer is installed on back of cylinder plug.) Water may be used to lubricate spring pad to aid installation.

Lever Handle

Retainer Spring Pad
14-5407-9034-999

For Yale®
7 pin cylinder cut to
11/32" (8.7mm) as shown
11/32
(8.7)

Yale #1802 Cylinder

Cylinder Spacer
14-5407-9201-999
(Used with 6-Pin Cyl Only)

Figure B-1

Yale Interchangeable Core Cylinder

Figure B-2

C. Troubleshooting

PROBLEM-- Keys do not operate but a beep is heard every five seconds

This is a diagnostic feature which indicates that one of the keys is being read as down (always being pressed). In that condition, the CPU board will not be able to read any other keys. It can happen because of mechanical failure within the switch element such that the key really is down, or keypad wires that are shorted to each other. The latter problem usually happens when insulation is scraped off some of the wires in the keypad cable as it is being fed through the door. You may be able to restore operation by rapping on all the keys. If this works, however, it is likely only a temporary fix and you should be prepared to change the keypad. Next, check the wiring of the keypad cable into the board. If you don't see any problems, the keypad will need to be replaced.

PROBLEM-- A key isn't echoed (no beep or LED flash)

This is the opposite of the above problem. A key is failing to be read when it is pressed. This can happen because of mechanical failure within the switch element such that the key will not close, or from a broken keypad wire. If, however, the problem is with a wire, more than one key will be "dead". If just one key is not being echoed, the problem is with the key itself. You can, of course, use the unit for all operations that don't require that particular key but you will want to replace the keypad for full operation.

PROBLEM-- Unit beeps when keys are pressed but does not accept programming

If the problem occurs on initial installation, usually it's caused by misunderstanding the programming instructions. Read them again carefully. Be sure you're not waiting more than 5 seconds between hitting keys as if you are, the entry will be ignored.

PROBLEM-- Beeper doesn't sound while the unit otherwise functions

Note that the beeper could have been deliberately silenced by the unit having been sent a special command. Even on a new unit, this could have happened by factory error. Attempt to restore the beeper by putting the unit into program mode and entering 7-2. You should see the two red flash confirmations. If the beeper still doesn't work, the problem is either a wiring mistake, a defective beeper or a fault on the CPU board with the output that drives the beeper.

PROBLEM-- One or more of the LED's do not work while the unit otherwise functions

This is either a wiring mistake, a failed LED in the keypad or a fault on the CPU board with the output that drives the LED. The keypad will have to be replaced to restore operation of the LED.

PROBLEM-- Error signal (one second long red pulse) received while programming

Anytime you receive an error signal, retry the programming operation. It's easy to mis-hit one key. If the error signal persists, it is almost always a misunderstanding of programming procedures rather than a fault with the unit. A product fault that impaired the operation of the microprocessor would generally prevent it from giving you the error signal.

When **programming the Hard Code**, you directly enter the code once you are in hard programming mode (slow yellow flash). Remember you must never pause for more than five seconds while pressing keys. The only way to get an error signal while programming the Hard Code is to enter an illegal one digit code or a subset code.

When in **program mode**, the most common error is to **forget to enter the two digit memory slot prefix** when attempting to program a code. Valid prefixes are 00-59 and if this step is forgotten in an attempt to enter the code directly, there are a lot of sequences that will create an error signal. For example, any sequence that starts with 6 will be

rejected. 8-5 is also illegal. Or if you entered just 9-2, the unit would read 9 as an attempt to change the door open time and then reject a single digit new time.

Another source of the error signal would be an illegal attempt to **enter a Program Code of less than five digits** (after prefix 0-0). Finally, while programming multiple codes, you will get an error signal if a code you're attempting to program is a subset of one already in memory or a duplicate (see Section 6.4).

PROBLEM-- Door opens on a short code that wasn't programmed

This can arise through an unnoticed programming error. Suppose you want to program 4-5-1-2. But when the unit is in program mode, you forget to put in the two digit memory slot prefix but just directly enter 4-5-1-2. The microprocessor will accept this sequence and interpret it as code 1-2 in memory slot 45. You test the code by re-entering 4-5-1-2 and the door opens because the sequence includes the real code, 1-2. Later it will be noticed that the door is opening on 1-2 as this is such a simple sequence that it will be entered. When you have any evidence that unknown codes (particularly short ones) are in the unit, it is **best to erase all User codes** and reprogram.

PROBLEM-- Unusual operation complained of after some operating history

"Unusual" operation can be caused by the microprocessor in the CPU Board being disturbed by electrical noise. Symptoms can vary quite a bit. The unit may forget its codes, the action of the keypad beeper may become drawn out or erratic, the timer may function at widely varying ranges, etc. To cure the problem, remove power (the batteries) from the battery compartment, press any keypad button, and then replace batteries (unit will beep). This forces the microprocessor to reset itself and reload its program. If the unit has functioned for a long period of time without incident, this may be an adequate fix. The problem may never reoccur but the end user should be made aware of this simple fix if it should reoccur. All microprocessors can sometimes "crash" and they are restored by reset.

IF THE PROBLEM PERSISTS
CALL SECURITRON TOLL FREE: 1-800-MAGLOCK

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