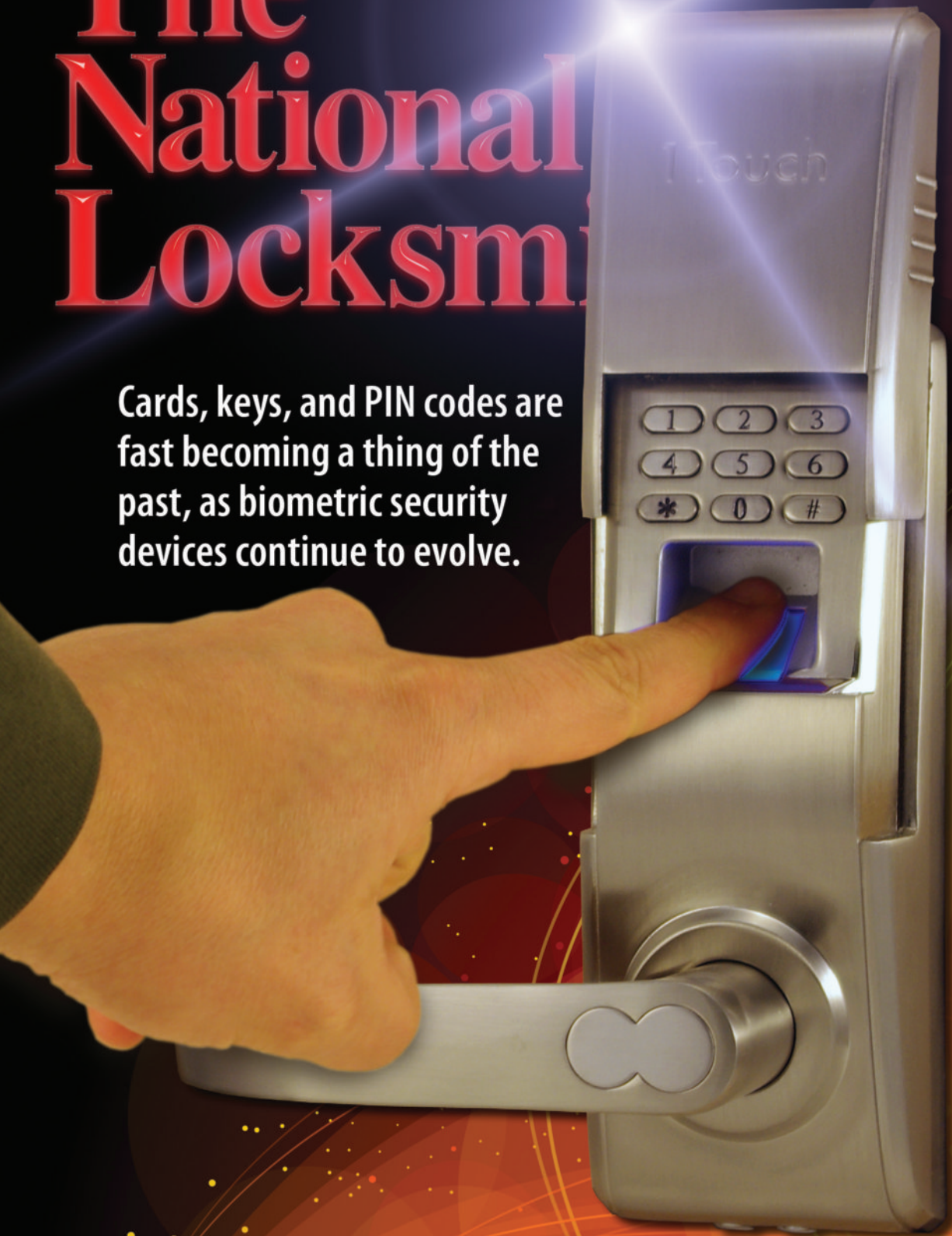


The National Locksmith

Cards, keys, and PIN codes are fast becoming a thing of the past, as biometric security devices continue to evolve.



1TouchQ2 FINGERPRINT Lock

Lock Installation

The 1TouchIQ2 lock can be installed in a standard 2 3/8 or 2 3/4 inch backset door prep without the need for drilling additional holes. The only real complication you might find is the high profile of the unit interfering with an existing deadbolt lock above the previous handle.

Like many electronic locksets, the 1TouchIQ2 has a rather tall profile. It isn't a problem where you are replacing a handle lock on a door with no existing deadbolt. Most doors with installed deadbolts will usually have the two locks in fairly close proximity to each other. Unless the deadbolt was intentionally installed rather high above the handle lock, you will likely contend with the need to move or remove the deadbolt (and plug the hole). That being dealt with, let's get to the actual installation.

The "brains" of the lock are contained in the front lock body (*photo 3*). If you need to reset the lock to factory default settings, you will need to remove the front lock body from the door to access the reset button (*photo*

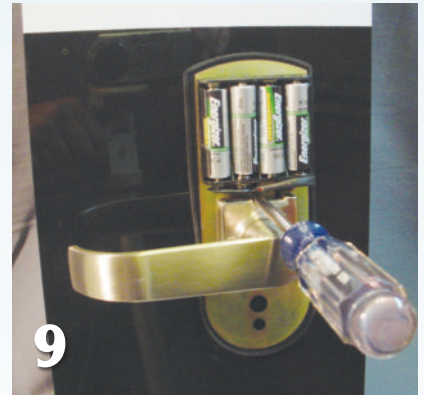
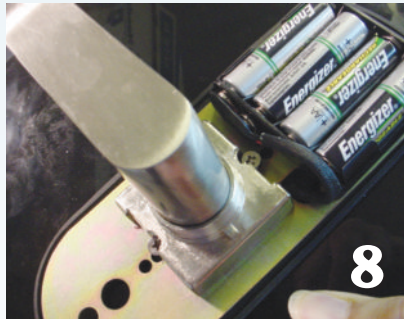
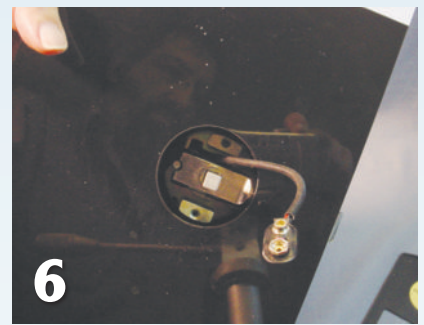
In recent years I have written articles about a variety of different electronic locking devices. Most have been about locks with key pad entry and a few with card readers. This is the first time I have had the opportunity to get my hands on a biometric lock that uses fingerprint access. The 1TouchIQ2 (*photo 1*) features the latest high resolution optical sensor fingerprint recognition technology. It has a slide cover (*photo 2*) that not only protects the scanner from the elements, but sliding the cover up also wakes the unit to allow a user to place a finger on the scanner to unlock or use a numeric code.

The US distributor for the 1TouchIQ2 is Ohio based Intelligent Biometric Controls. This lock utilizes a high-performance algorithm to capture and identify each user's biometric template data. The unit does not store the actual fingerprint, but instead it

uses what is referred to as minutiae point extraction and converts the data into an encrypted mathematical string. This data cannot be removed from the 1TouchIQ2 unit to recreate a copy of your fingerprint.

The 1TouchIQ2 can replace your existing door handle lock in a standard door prep. It is easily installed and does not require any additional holes beyond the existing cross bore hole. The lock is packaged with both a 2 3/8 inch and 2 3/4 inch backset latch. It is available in three finishes: Polished Brass, Antique Brass and Brushed Nickel. I have been told that the handing of the lock is not field changeable, so you should verify the handing of the door where the installation will take place. It uses an ADA compliant lever handle. The all weather design boasts an operating temperature range of -29 to 140 degrees Fahrenheit.





4). The reset process will be explained later when I discuss that and other programming features.

The lock includes both a 2 3/8 and 2 3/4 inch backset latch. Your first step will be to install the correct latch for the backset of your door. The display mount had a 2 3/4 inch backset (photo 5). A rubber grommet/gasket is used on each side of the door and positioned behind the front and back lock bodies. With the rubber gasket in place for the front body, position the power cable through the cross bore hole (photo 6). Another rubber gasket will be placed on the inside of the door (photo 7), to be placed beneath the back body. The power cable fits through an opening in the back lock body (photo 8) and should be positioned to connect

to the battery pack. The plug end of the cable looks like it should connect to a 9 volt battery, but it connects to the battery pack which uses four AA batteries. I used rechargeable batteries for demonstration purposes, but you should use alkaline batteries for longer life and less frequent battery changing.

Only two mounting screws are required (photo 9) to attach the back body. Tighten most of the way (photo 10) and then make sure both front and back lock bodies are straight before fully tightening the screws. The inside handle is part of the back body so you will need to position the back body cover around the handle (photo 11) to cover the battery pack. A plastic washer is set in place (photo 12) before at-

taching the bezel nut (photo 13).

After you hand tighten the bezel nut, you can snug it down properly with a special included bezel wrench (photo 14). It has two protruding pins that connect to matching holes in the bezel nut (photo 15). The wrench grips the bezel nut (photo 16) to tighten it or to later loosen it when it needs to be removed.

Lock Operation and Programming

The 1TouchIQ2 lock is primarily designed to unlock with a person's fingerprint. It has two other alternate means of entry, but it is intended to operate by the one key that you will likely never lose or forget somewhere. Under the slide cover is a finger-

print scanner not much larger than a postage stamp (*photo 17*). You will also see a key pad with less than a full set of numbered keys. The available digits run from 0 to 6. That means that you can't use the digits: 7, 8 or 9 in any numeric code that you program. That also eliminates those digits from any three digit user code identification. That may sound like a shortcoming, but it really isn't. If your intention is to use primarily numeric codes, you probably should be installing a different lock entirely.

One of the primary benefits of a "keyless" lock is that you don't need a physical key to carry and potentially forget or lose. That is one of the primary benefits of a lock that uses a key pad and numeric codes. The biggest disadvantage of numeric codes is that someone can take that "key" from you without you missing it. Someone who shouldn't have access could learn the code and gain entry without physically taking a "key" from you. Therefore this lock is most beneficial and secure the more greatly you rely on fingerprint access over keypad access.

Like many electronic locks, the 1TouchIQ2 has a clutch device for the outer handle. The handle pulls down freely when in the locked mode rather than the lever handle being rigid (*photo 18*). Although the handle will move, the latch will not retract. You will also get this same result turning the handle under the following circumstances: entering a wrong numeric code or fingerprint, waiting too long to enter your code or fingerprint, or some kind of lock malfunction or power/battery issue.

As long as the lock has battery power, the act of lifting the slide cover turns on the light of the fingerprint scanner (*photo 19*). This wakes the unit from sleep mode and allows you to either enter a numeric code or place



a finger on the scanner (*photo 20*). If an enrolled fingerprint or numeric code is entered, the unit will cause the turning motion of

the outside handle to draw in the latch (*photo 21*).

The 1TouchIQ2 lock is available in two different configurations. The IQ-AT is the audit trail version of the lock which allows you to audit who accessed the lock (with the optional USB Audit



Trail Kit). The IQ-AT will accommodate up to 36 fingerprint users and 78 pin number users. The unit is audit capable but can be used without the audit trail kit. If you think you might need audit capability later, you can choose not use that feature until a later time. When you decide to set up for audit ability, you will need to program the date and time into the lock so you can accurately audit lock usage.

The IQ-HC (indicating high capacity) is outwardly nearly identical to the IQ-AT except it can accommodate up to 75 fingerprint users and 78 pin number users. As a tradeoff for additional fingerprint capacity, you lose the ability to have audit capability. Other than that, operation and programming is nearly identical between the two versions.

The 1TouchIQ2 is programmed externally through the keypad. Unlike some electronic locks, programming is not uploaded to the lock through outside equipment. Even if you chose not to program any numeric codes, you would need to use the keypad for lock programming. A default master code is programmed into all 1TouchIQ2 locks. The default Master Code is: 11111111. Once you set your new master code, you will need it for any lock programming. If you choose to set a numeric code, you must make it eight digits also. All numeric codes must contain eight digits. To program the lock, you will press a series of keys on the keypad. The plus

(+) sign does not refer to a key on the keypad, but separates the sequence of steps.

As with lock operation, programming starts by lifting the slide cover and “waking” the unit. The fingerprint scanner will light up when the cover is lifted. If you wait too long between steps you will need to restart the process by lowering the cover and sliding it up again.

To change the master code, press: 0 + * + DEFAULT MASTER CODE + NEW 8 DIGIT MASTER CODE + NEW 8 DIGIT MASTER CODE + #

Note: When programming is successful, the lock will make a solid single beep. If the process is unsuccessful, it will make three quick beeps.

There are two ways to enroll fingerprint users. One is random, where no user ID’s are set. When programmed in this manner, you cannot remove individual fingerprints from access. If someone needs to be deleted from the system, you will need to delete all fingerprints and re-enroll from scratch again. The other method is to set user ID’s. With that method, every fingerprint is individually identified by a user ID, and you can individually delete ones that should no longer have access. The first method is probably faster, but it is a much bigger hassle if you need to remove access from someone whose fingerprint had been previously enrolled.

To enroll fingerprint users at random (No User ID’s), press: 1 + # + MASTER CODE + #. At this point, the scanner will light up. You will need to scan twice for each fingerprint enrolled. For the first scan, place the finger to be used on the scanner when it lights up and remove it when the light turns off. The light will turn on a second time and you repeat with the same finger to confirm. You will hear a single beep if that fingerprint enrollment succeed-

ed. In random mode, you can continue to enroll other fingerprints as long you don’t let too much time pass between steps. Then you would need to start at the beginning of the process again. If a scan fails, you will hear three beeps and the scanner light goes off.

To enroll fingerprint users with user ID’s, press: 1 + # + MASTER CODE + 3 DIGIT USER ID + #. You will scan the finger twice when the scanner lights as above, but additional enrollments will require starting the process again with a new 3 digit user code.

I mentioned earlier that you can also program numeric codes in addition to fingerprints. The process is similar to enrolling fingerprints. You will still need to assign a user ID (so you can later delete the user code), but you will enroll a numeric code instead of a fingerprint. The keys pressed will also be different. To enroll a pass code user, press: 1 + * + MASTER CODE + 3 DIGIT ID + NEW 8 DIGIT PASS CODE + NEW 8 DIGIT PASS CODE + #. Note that you can’t use the same three digit user ID for both a fingerprint and a pass code. They must be unique and different. The process is similar to enrolling fingerprints, but the star (*) key is used instead of the pound (#) key at the start of the process. Confirmation of a pin code is also a single long beep, and three beeps also indicate failure.

Like a number of other electronic locks, it is possible to put the 1TouchIQ2 into passage mode. This allows access with neither an enrolled fingerprint or pin code. It works different from some locks in passage mode, in that you can’t just walk up to the door and turn the handle to retract the latch. You won’t need to enter a fingerprint or pin code, but you will still need to lift the slide cover and turn the handle in the same amount of time the lock

stays open when a fingerprint or code is entered. That is roughly about five seconds. However, if you wait too long and it relocks, you only need to close the cover and slide it back up again to open. You may need to wait a few seconds after closing the cover before reopening it. To enable or disable passage mode, press: * + * + MASTER CODE + #. Doing this will toggle the unit back and forth from one condition to the other. If it is already in passage mode, doing this will set it back to regular operating mode and vice versa.

I mentioned earlier that fingerprint users with user ID's can be removed individually without affecting any other users. To delete a fingerprint user in this way, press: 2 + # + MASTER CODE + USERS 3 DIGIT ID + USERS 3 DIGIT ID (again) + #. If you wish to delete ALL fingerprint users, you can do it all in one process. This deletes all fingerprint users, both those that have and don't have user ID's. To accomplish this, press: 3 + # + MASTER CODE + #.

If you wish to delete individual pass codes, press: 2 + * + MASTER CODE + USERS 3 DIGIT ID + USERS 3 DIGIT ID (again) + #. To delete ALL pass code users, press: 3 + * + MASTER CODE + #.

In the first part of this article when I was describing the installation, I made reference to a reset button on the back surface of the front lock body. I have just described how to delete individual fingerprint and pin users, and also how to delete either all fingerprint users or all pin code users. If you decide that you want to restore the lock to factory settings, you can not only delete all users, but you can also restore the factory default master code. In order to do this, you will need to remove the lock from the door. With the back side of the front lock body in view, first make sure

that the power cable is attached to the battery pack. Because the plug end of the cable will also attach to a 9 volt battery, you can use such a battery for resetting. Never use a 9 volt battery to power the lock for everyday use, but you can use it to reset to factory defaults. With power connected, press and hold the reset button. While holding the reset button down, use your other hand to lift the slide cover up. After about 15 to 20 seconds, you should hear a long beep. That indicates that the lock has been reset. To verify this has been accomplished, slide the cover up and enter the default master code: 11111111. It should open the lock.

Mechanical Key Bypass

As with many keyless electronic locks, the 1TouchIQ2 has a mechanical bypass cylinder in case you lose power or have some other lock malfunction. When I first looked at this lock, I had no clue where this bypass cylinder was located. The keys to the cylinder (*photo 22*), bear



a strong resemblance to Mul-T-Lock high security keys. Along with the keys, you get an interesting key ring magnet that will shortly be demonstrated. The magnet sticks to the figure 8 outline on the front surface of the outside lever handle (*photo 23*). Presto... and you remove a figure 8 shaped metal plate (*photo 24*),



that exposes the bypass cylinder. A close-up view shows how thin the plate is (*photo 25*).



A view of the key and keyway (*photo 26*), confirms the striking resemblance to a Mul-T-Lock key and cylinder. Insert the key until it stops (*photo 27*). The key is tip stopped, so don't expect the key shoulders to contact the face of the cylinder plug. Rotate the key counterclockwise one quarter





turn (photo 28). The clutch will now engage and the latch will retract when you turn the handle (photo 29).



The Audit Trail Kit

The IQ2-AT version of the lock has audit capability. An electronic audit device (photo 30), is used



to both upload data from the lock and later download the data to your computer to identify when the lock was used and who was using it. The cable with a pin type jack is attached to the unit (photo



31), to connect to the lock. An on/off switch can be seen. It will plug into the lock on the bottom surface of the front lock body (photo 32). A second hole appears to be covered by a plastic piece. I'll explain more about that later. A second cable connects to the unit which has a USB plug on the end (photo 33). This cable allows you to upload data from the device to your computer through one of its USB ports. I have been told that the audit software should run fine with Windows XP, but I was not clear if there might be driver problems if you used Vista or Windows 7. I am planning on getting a net book with XP on it, because I have been told by other makers of electronic locks that Windows XP is generally the standard op-

erating system that will be most compatible with various brands of electronic locks.

Emergency Power

Battery powered locks have the unfortunate potential weakness of running out of power and leaving your keyless lock without an electronic means of access. This lock, as in most, has low battery warnings, so it shouldn't happen. However, just in case, the 1TouchIQ2 has an extra option beside the mechanical bypass cylinder. This will only apply to the IQ2-HC that doesn't have audit capability, but the plug hole and the plastic cover at the bottom of the front lock body is replaced by battery contacts for use externally with a 9 volt battery.

If you attempted entry and realize you forgot to replace the batteries inside the lock, you would have the option of finding a 9 volt battery and touching it to the two contacts to temporarily power up the unit while you either enter a pin code or touch your finger to the reader. This lock uses non-volatile memory, so you don't lose data when the batteries go dead. As long as you can restore power to the unit, any and all codes will still operate the lock.

I found the 1TouchIQ2 lock to be very interesting and impressive.

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www.fingerprintdoorlocks.com

