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In 1883, 27 year-old Edouard Delamare-Deboutteville built the very first gasoline driven automobile. He, and his father’s mechanic, Charles Malandin modified an 8-HP, stationary gas engine used in a cotton mill and fit the engine to what was known as a “four-wheel” hunting brake. However, this car was not the first production car. That distinction goes to Benz-Damli in 1888.

Regardless, the first recorded car theft took place in Paris, France when a Peugeot belonging to Baron de Zuylen was stolen by his mechanic on June 1, 1896.

From there on, manufacturers, entrepreneurs, and auto-owners alike have been trying to find ways to make it more difficult to steal an automobile. In 1932, Modern Mechanix (Published in Britain) magazine carried the following ad assuring motorists that this product would scare the “auto bandit” off because the bandit would think he would be shot at, (see photo 1).

My grandfather’s 1940 Ford had a toggle switch on the steering column (actually the switch was housed in the bracket that held the steering column shaft) that would allow the car to start when the starter switch, on the floorboard, was pressed. To the side of that toggle switch was a key cylinder that locked the steering column.

This arrangement was one of Detroit’s early efforts at establishing a greater degree of security to thwart the depredations of the growing numbers of car thieves.

Personally, I like Ford’s idea better then the compressed air gun. But like all security measures throughout time, automotive security continued to evolve.
as newer and better technology has found its way into the marketplace. Sirens, cutout switches, wheel boots, locking steering wheels, tear gas canisters, and junkyard dogs have all been employed to discourage the would-be thief from making a particular automobile their next target of opportunity.

In the early 1960’s GM introduced the Saginaw, in-column ignition. In the mid-80’s along came VATS (Vehicle Anti-theft System), from there we progressed to PATS, MATS, transponder keys and ignitions and now we have keyless cars.

You can copy the links below and paste them into your browser to get the latest on keyless technology.


Keyless technology is doing more than offering car owners a higher degree of theft protection and convenience of entry and vehicle starting. Some vehicle keyless systems offer memory capabilities for seat and mirror settings, temperature control and music preferences. How far are we away from voice recognition and biometrics? Not far, I’m sure.

Along with the convenience of these new systems, they also have some potentially negative consequences not the least of which most likely will include problems with valet parking and a retraining curve for owners, until the owners learn the idiosyncrasies of keyless systems.

One of the retraining aspects of the keyless systems is for the owner to remember that the key fob must be in the vehicle in order to start the car.

The Infiniti Key Fob

According to one report that I read, one of the safety features (to keep the car from starting inadvertently) was that the car had to be in park and the break pedal had to have foot pressure on it. Also, the car could accidentally be left running and if the driver left the key fob in the car, and locked the door, they could not shut the engine off.

The Lexus IS 250/350 Start Button

The Lexus IS 250/350 does not require a key to start the vehicle at all. (see photo 2). In the scheme of keyless cars and high-tech anti-theft systems for today’s automobile, these are issues that will be resolved and owners of these vehicles will adapt to the changes and the erstwhile car thief will have to resort to other pursuits or steal a rollback truck to cart the car off to the chop shop.

But what about lockouts?

As these systems become more and more complex are they still going to fall prey to a set of mechanical opening tools? Or will opening tools keep pace with the new security technology that has given us the keyless concept?

Will the new generation of opening tools include a laptop? Keep in mind that any program that is designed to operate any system can, and often will, be circumvented by another program.

Are we entering into a new era of high-tech tug-of-war between the automakers and the car thieves? Check out the following site: http://www.leftlanenews.com/gone-in-20-minutes-using-laptops-to-steal-cars.html.

One innovative way of unlocking these cars circulate on the Internet and suggested that if you could call someone on your cell phone and have them “beep” your spare remote into the phone, you could unlock your remote entry car by holding your cell phone close to the lock.

Sorry, Charlie, but it doesn’t work that way.

The idea was sort of a jury-rigged On-Star, without having to pay the fees or have the equipment installed. The reality is that your cell and your remote, or keyless entry systems might work if the signals were aural (sound-based) but in actuality, the RKE and keyless systems work on radio frequencies by transmitting an encrypted stream of data to a receiver inside the car. Radio Frequency? Radio Receiver? Get it? That frequency cannot be effectively transmitted over a cell phone and be expected to unlock a locked vehicle.

Add the disparity between cell phone frequencies that operate in the 300 MHz range, and are not compatible with the remote and keyless systems which tend to operate in the 800 MHz range. Since the RF waves operate through the air, it’s not likely that the aural signal will be an effective way of unlocking your car via your cell-phone.

I suppose that, theoretically at least, it might be possible to use a Variable Frequency Oscillator to transmit a signal that would activate your RKE system and unlock, or start, your car but most folks don’t carry those beasts around on a key chain or in their pocket or purse, (see photo 3).
Aside from the size, weight, and scarcity of VFO’s, running through a bazillion frequencies might prove too time-consuming for a locksmith trying to unlock your car or a thief trying to steal it.

Today, there are some interesting studies being done on the use of laptop generated logarithms to bypass these systems. No doubt in my mind that in the future, laptops and hacker programs may defeat the common remotes found on about 70% of the new cars sold. And, those same laptops might be able to decode and with the proper equipment override the keyless ignitions as indicated by the link above.

Until such time that laptops and hacker programs do become as common as coat hangers, stones and Slim-Jims®, the average car thief is in for slim pickin’s when it comes to the cars they can steal without using roll backs and relying on keys left in the ignition switch.

The good news for the locksmith is that most of these keyless entry cars today: Cadillac CLS, Toyota Camry, Lexus and even BMW’s, can be opened with “long-reach” tools that are slid between the door frame (or window frame) and doorpost of the car and are used to manipulate the door lock switch in side the car.

Steve Myslik, a locksmith friend and a Southeast director for ALOA tells me that long-reach and across the car tools are the preferred methods of entry when these cars have been locked with the remotes and keys inside.

According to Steve, there are some “tricks” involved in making these tools work effectively and I’ve had other locksmiths tell me that they prefer to use under-the-window tools.

As I see it, the fact remains that no matter how quickly the automotive industry develops and implements new and “smarter” technologies to secure their cars for the vehicle’s owner, someone, somewhere is going to be looking for a way to defeat that system.

The methods that are ultimately used to defeat these newer systems may be a high-tech, hand-held variable frequency oscillator, a laptop or a common brick.

My money says that it will be a locksmith who will find the least damaging means of entering these cars. Just like it was a locksmith who found a way to pick the unpickable BMW lock. Just like it was a locksmith that found a way to pick the unpickable Bramah lock over a hundred years ago.

There is now an even greater incentive for us to expand our knowledge and abilities. What we had come to accept, by the mid-1960’s, as commonplace automotive security technology is now antiquated as my grandfather’s 1940 Ford ignition system was in 1962.

Times, and technologies, continue to change. We have to change with them or we will become as obsolete as hand-cranked automobile engines.
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I was called by another locksmith to open a Blue Sky safe for a car dealer. I did not know what a Blue Sky safe was or who made it. The referring locksmith told me it was a dual key operated safe.

The safe was located under a counter, in a corner, surrounded by boxes. One needed to be a contortionist to even get to the safe door. That is why all the pictures were done on a workbench after the safe was open.

This particular safe is a front door depository so the day’s receipts could be deposited and taken to the bank the next day. The keys to this safe were locked in a larger safe upstairs in the dealership. Burglars broke into the dealership, pushed the upstairs safe through a wall, and dragged it to the body shop. Once there they used a cutting torch to cut the door off the large safe and got the keys for the main floor safe.

With keys in hand, the burglars opened the small Blue Sky safe and made off with all the contents which included credit card receipts and cash. The open Blue Sky safe door is pictures in photograph 1. To add insult to injury, the robbers locked up the safe and took the keys with them. There was no duplicate set of keys available. The dealership wanted the safe opened so they could get their money out. At the time they didn’t know it was empty.

I assume (DNA) that Blue Sky Safe is a label company and puts their labels on import safes. The label is shown in photograph 2. It states that Blue Sky Safes features excellence is quality,

Continued on page 10

1. Blue Sky Depository Safe Door (after opening).

2. Blue Sky Safe label.
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service, and price. Professional Safe Openings, service and repairs. Electronic Lock Retrofits and New and Used Safes. There is a website and phone number listed. I think I will go to the website and see what it says. They are out of Upland, California. Nice website at: www.blueskysafes.com.

I have all the puller kits for safe deposit type boxes. I rarely use any of the myriad of tools and pullers except if the key trunion face is sunk too far below the door face. What I do use is a specially ground screwdriver reminiscent of can openers on Army knives. The tip is ground away so the remaining blade just fits between the edge of the casting and the center of the keyway. All I have to do is to pry gently and the edge holding the trunion in place until it snaps away. I move the driver a little, pry, and more of the casting ‘pops’ out. This is a very fast way to remove the casting that holds the nose and trunion in place.

When using this tool on the renter’s side of the lock, the center must be forced so that the foot attached to the bottom of the trunion breaks free and

Continued from page 8

4. Rear of door, “Made in Spain.”

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the keyway can be rotated a full 360 degrees. Once most of the casting has been removed, just reverse the screwdriver in the keyway and turn it around fully. This will remove any small pieces of metal that you might have missed when prying against the edge of the casting at the top of the horn. Usually the trunion will fall out of the lock if it has not been damaged. *Photograph 3*, shows my tool (old screwdriver) and the handle in the locked position on the safe door.

The above method is fast and easy. Once the nose and trunion have been removed, just pry all the internal levers away from the locking stubs on the movable bolt and pry the bolt to the open position. This may take as long as 10 minutes.

The back of the safe is shown in *photograph 4*. There are two large locking bolts on the opening side of the door and two protrusions to keep the door locked if the hinges are sawn off. Looking at this picture closely, I saw a small plastic circle button on the back of the door. Magnifying this digital picture I saw that the words “Made in Spain” were embossed on it. One of the wonders of digital photography.

Moving right along in *photograph 5*, we see the workings of this well made unit. There is an ILCO A400 RH lock mounted Vertical Down (VD). 1.25 inches to the LEFT of this lock in the picture is a spring-loaded relock pin. Next to the relock pin is a detent mechanism that extends when the bolts are thrown into the open position. A small blocking bar moves into the lower channel to hold the bolts in the open position when the door is open.

There is an adjustable bolt between the arms on the hinge side of the door that butts up against a bolt on the door jamb. When the door is closed, this pushes the bolt in and allows the two large locking bolts to spring out into the locked position.

*Photograph 6*, shows the ILCO lock removed and the relock pin in the extended locked position. If one could punch the lock fully, then the pin could be forced up through the top hole in the door. The opened lock is placed above the cutout to remind me of a practice I have used for years. With the lock open and the bolt in the open position; it is easy to remove it from the door. When replacing the lock with a new one there is a method that I use that has a couple of benefits.

First, I duplicate one of the renter keys. I then cut off the ears or lobes on the key so it is a long straight piece of metal that will fit easily through the hole in the door while in the lock. I then insert the Guard key, turn it, then use my make-shift renter key and turn it and withdraw the locking bolt. I then turn and remove the Guard key. The lock is still open and the bolt is still in the unlocked (in) position.

Now I can install the lock in the door easily. Once installed and the relocker bar reset, I turn my customized key and the bolt will come out and lock the door. I then remove it and try both the regular key and the guard key which I turn over to the customer. On the invoice I mark down the number of the new guard key. I also put the cut down renter’s lock installation key in a small plastic envelope with the paperwork. Now, if at any future time, I can make another set of keys by duplicating a guard key (from my Master set) and a regular renter’s key form the fragment that I have in my files.

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What makes this product so special? It’s the PTFE, or what is commonly known as Teflon! Teflon is Dupont’s brand name and design for a polytetrafluoroethylene (PTFE) particle.

I first heard about PTFE in the early 1980’s when I was introduced to a product called “Slick-50.” It was an engine additive that had small particles of PTFE that were measured by the micron. The particles would become lodged in the pores of the engine cylinder and other parts that rubbed together.

For more information about LOCK SAVER® contact them at:
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Locking Gas Cap Removal

I do not know if anyone has tried this approach to removing a locking gas cap, but I tried it Thanksgiving Day and it worked for me.

I was called to remove a locking gas cap from an older RV. Someone had tried to remove it with a flat type screwdriver and the customer's key would not go in the lock. After looking with my scope I noticed that the first few wafers were pushed in toward the back, and I told the customer that I would probably have to destroy the lock to remove it.

After making sure they understood and agreed that I might have to destroy the locking gas cap; I used an A-1 GM puller on it and it worked out great. The tool pulled the cylinder right out of the housing and all I had to do was use a small flat screwdriver to turn the locking mechanism and remove the gas cap.

Bruce Horne
Florida

Two for the Price of One

I would like to submit two Technitips here. The first one details removing the retaining pins on ace-style tubular locks. My solution is to use a 3/32" drill bit in a bench top drill press and vise to drill a hole in the retainer. Then, I thread a 1/4" x 8 self-taping screw into the retainer.

Next, I use a claw hammer to pull the screw, as I would pull a nail. The retainer pulls right out. After removing the screw, the retainer is reusable.

My second tip concerns replacing coil springs that push the retainers up against the tailpiece retainer on a cylindrical lock. You know how you have to replace one after the ones you’re replacing go flying across the shop.

Simply collect old BIC-style lighters. When you need a retainer spring disassemble one of the lighters and use the spring that pushes the flint up against the strike wheel.

Different brands of lighters have different size springs—many that you can use when needed. And, they’re free!

Matthew Flowers
Pennsylvania

Fast and Easy Civic Door Lock Service Trick

Here is a tip that will make replacing or servicing the door lock on a 2001 Honda Civic that will just amaze you in the sheer simplicity.

Because the lock fits in the door handle assembly and is held in place with a wire clip (similar to the larger version of the old window crank clip) removing the lock requires an “L” shaped dental pick to pull out the retainer and the lock will pop out to be serviced from the rear of the handle.

Anyone who has worked on the 2001 Civic knows how hard the retainer is to get off and how doubly hard the retainer is to get back on!

The hard part (and I mean the HARD part) is reinserting the door lock back into the handle assembly and having the clip line up with the notches in the plastic handle assembly while it is mounted on the door. It cannot be done! As quick as you gain the edge on one side, it will not line up on the other side, and back and forth you will go in frustration, happily begin pulling your hair out!

Not anymore!

Insert a #14 Metric long socket in the hole that the lock is oriented in and with ease the clip will ride the smooth surface of the socket and be guided to BOTH notches in the handle and snap in place with the greatest of ease.

Simply push the clip up from the bottom and the smooth chrome surface of the socket will expand the clip as it slides up and over the socket, to finally rest in its proper place in the handle.

After placing the clip it’s a stunningly simple matter of inserting the lock into the handle until you will hear the clip “snap” around the lock cylinder and hold it in place!
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Mercedes Trunk Opening Tip

I was called to open a 2000 Mercedes C230 on a Saturday afternoon. Assuming the keys were locked in the passenger compartment, I figured it would be a simple opening and be on my way in a very short time.

When I arrived the customer told me the keys were locked in the trunk. Another locksmith had been there before me and got the car opened, and as a consequence, the security system kicked in and the trunk release that is on the center console would not work.

I tried to get in from the back seat, the seat removes easily but that would not give me access to the trunk!

Then looking on the back deck I noticed a compartment for a First Aid Kit. I opened the compartment and found that it had a plastic liner that I was able to easily remove. Once I pulled the liner out, I saw there were openings underneath that opened into the trunk.

I grabbed a flashlight and was able to see the keys. I used a car opening tool reached in and hooked the key ring, pulled them through the hole. The woman was very happy that I didn’t give up and leave her stranded!

Newer BMW Opening Trick

I have always heard you can’t open the newer BMW’s. Supposedly, this is especially true when the keys are in the trunk. Well, I’ve always been told you can’t believe everything you hear, so deciding to see if what I was hearing was true or not, I found that there is a way to open one of these vehicles—with the keys locked in the trunk!

First I use an air jack to gently wedge the door open. Then I use a Big Easy, or other long-reach tool to depress the button with a picture of a door with a key on it that is located right by the shift lever.

After I depress the button, I grab the door handle and pull on it twice. The second time the door opens. If the keys are just in the car I’m done. If the keys are in the trunk, I found the easiest way to get them is to pull the speaker out of the deck by rear window.

Removing the speaker allows access the trunk through the hole in which the speaker sits. Then I use a long hooked tool to reach into the trunk and retrieve the keys.

VW, Audi, Porsche Impressioning Tip

Many VW, Audi, and Porsche ignition locks do not have codes on them, and other means of generating keys must be used.

I’ve found those locks using the roller bearings for dust shutters to be extremely difficult to impression or pick due to the heavy pressure exerted by the dust shutter. There’s a simple way to do it though.

With the lock removed, drive out the roll pin retaining the tailpiece. Use a wide tension tool in the front of the lock, and rake the wafers from the rear through the keyway. The lock will generally pick quite rapidly, and the plug can be removed after rotating. Service the lock or make the key at this point, then reassemble and re-install.

Flipping a Door Guard Latch

I saw a tech tip in the October 2004 issue of The National Locksmith about a lockout with a door guard.

I work in a 2000 room hotel where we would have this happen at least twice a day. I carry a length of spring steel about 3/8” wide with a V-groove cut in the end. I would open the door, as far as it would open, and place the groove on the swinging part of the door guard.

While holding pressure on the door guard, I quickly close the door. The spring steel will flip the guard out of the way. If
you do not have a small length of spring steel, a Slim Jim works as well.

Richard Frick
New Jersey

Door Panel Removal Tool Tip

For an economical and easily made door panel popper, try taking an old putty knife and cutting a 7/16" x 1 1/2" notch down the center of the knife (see figure 1).

Figure 1.

Once the notch is cut (file the edges to eliminate any sharpness or burrs) Insert the knife between the panel and the door, with the plastic rivet in the center of the notch and turn the tool on its side to separate the panel and door from one another. If you wish, you can also “round” the corners off of the end of the putty knife to preclude it gouging or scratching door surfaces.

The side-wise movement will pop the rivets and allow you to remove the door panel. I have also found this tool handy for removing the padded panels you will sometimes find in gun safes.

The large handle on the putty knife allows you to grip the tool firmly and also permits you a great deal of control over the motion and direction of the tool. Also, the stiffness of the putty knife blade gives you a little more torque for twisting when needed.

I think it's a great tool to have in my toolbox and has saved me a lot of time when dealing with various types of clip-on door panels.

Ian Greene
Kentucky

Golf Tee Hole Filler Trick

Here’s a tip to speed up repairing stripped out screws that you can find a use for on a day-to-day basis while performing normal locksmithing functions.

For over thirty years I have always carried a package of wooden golf tees in with my other must have tools. When I find a loose strike or strike plate where the screw hole has been wallowed out, I remove the troublesome screw, place one of my trusty golf tees in its place, tap it securely into the wallowed out screw hole.

The large head of the tee makes a perfect platform to gently drive the tee into the opening. I cut the tee flush with the door frame with either a chisel or a pocket knife before replacement of the screw.

John Alwine
North Carolina

GM Ignition Removal Trick

My tip is for a drill guide that allows the removal of double-sided GM ignition cylinders without removing the column shroud.

I've found that this guide will work for many of the GM trucks and vans that have the hole to access the ignition retainer on the top of the column. The guide is inserted with the ignition in the off position (see figure 2).

The 3/32" hole is drilled through the plastic housing. The idea is to make a small hole that will allow a wire to be used to depress the spring-loaded retainer when the ignition is turned to the start position. It is made from an Ilco P1107 key blank, and 5/8" aluminum stock. Self-tapping cylinder screws hold the stock to the blank. The hole in the guide should be 3/16" past the tip of the key (see figure 3).

Don Miller, CML
Michigan

Wafer Reading Tool Tip

After taking the Foley-Belsaw course, I felt I needed additional training in the art of reading wafer locks. I purchased Bob Sieveking’s book on wafer lock reading, which included his excellent reading tool. In his instruction manual, he provides directions on making a tool that holds the shutter door open.
After building one, I came to the conclusion that, for certain locks, I needed to position a shutter door tool that holds the door open in the center. I offer this to any locksmith with the same need.

I used the backing from an old windshield wiper blade. It’s thin, stainless steel and easy to work with. I also used a refrigerator magnet—the advertising type. I cut the steel strip about 10” in length and bent one end with a slightly greater than 90 degree bend and an appropriate length. The other end bends back on itself to hold onto the magnet. I then slit the magnet in two places (see figure 4).

After gluing it all together with some epoxy, I had a shutter tool that would do what I wanted. The magnet holds the tool to any metal surface without the danger of marking that surface. If the advertising on the magnet (mine was from a pizza restaurant) bothers you, glue one of your business cards over it.

James Rodgers
Missouri

Simplex Opening Tip

Try the following method to gain entry to an Ilco-Unican push-button lock when the combination is not known and there is no key override.

Drill a 1/16” hole, 3 5/8” from the bottom of the lock case, and 7/16” from the surface of the door. Depending on the accessibility of the lock case, this hole can be drilled on either the right or left side of the lock, depending on the hand of the door. The important thing is to make sure you know where the locking slide access hole is (see figure 5).

Insert a probe (beveled tip) and locate the unlocking slide. I like to place marks on the probe to determine the correct amount of insertion of the tool from either side (see figure 6).

Once the probe is inserted in the unlocking slide, just pull the slide slightly from the right hand side, or push lightly from the left. While doing this, the lock is now in the passage mode and the handle will open the lock. The small hole can now be filled in various ways.

This trick may take a little practice and I strongly recommend that you “play” with an old Simplex before you try it on a customer’s door.

Cec Bacon
Canada
MUST HAVE KEYS FOR YOUR PEGBOARD

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5907553 HONDA “V” KEY
5907793 MITSUBISHI MONTERO +
7003526 NISSAN “N4” KEY
5910834 TOYOTA 4D ENCRYPTED
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1. The Entourage is Hyundai’s introduction into the mini van arena. This vehicle does not feature a transponder system, however, it does feature 6 standard air bags including side curtain airbags for all three rows of passengers.

**Note:** Key codes are converted to a 10 cut key with the first and second cuts being a one cut for the entire code series.

**OPENING METHOD**

**Procedure:** Through the Car Method  
**HPC Tools:** No. CO-80 Switch Stick, No. AW-99 Air Wedge®, No. LW-100 Lever Wedge, No. AS-1 Auto Sleeve.

2. On passenger side door, slide in Air Wedge® vertically on latching side of window frame portion of door. Use a Lever Wedge at top horizontal portion of window frame if necessary to assist.
VEHICLE SPECIFICATIONS

Year: 2007
Make: Hyundai
Model: Entourage
Code Range: H0001-H2500
Key Blank: HY-15
DSD/1200CMB Card: 235 / CF235
Cutter: CW-1011
Jaw: A with shim

Spaces:
1. .937
2. .854
3. .771
4. .689
5. .606
6. .524
7. .441
8. .358
9. .276
10. .193

Depths:
1. .324
2. .305
3. .285
4. .266
5. .246

Service Level of Complexity: 2
(1=Easy, 2=Moderate, 3=Difficult)

Lock Picking Directions
Ignition Lock: Clockwise
Driver Side Door: Clockwise
Passenger Side Door: Counter-Clockwise
Rear Hatch Door: Clockwise

Ignition Lock
Cylinder: 8 Wafers
Pickable: Yes
Lock Positions: Lock, Accessory, On, Start
Type: Push To Turn (With Key in Cylinder, Push on Key to Turn Cylinder Back To Lock Position)
Code on Cylinder: No
Transponder: No

Door Lock(s):
Cylinder: 8 Wafers
Pickable: Yes
Lock Positions: N/A
Type: N/A
Code on Cylinder: No

Rear Hatch Lock
Cylinder: 8 Wafers
Pickable: Yes
Lock Positions: N/A
Type: N/A
Code on Cylinder: No
File Cabinet Locking Bars
by Major Manufacturing

THE NEED:
Your customer calls you to lock a file cabinet for them and they don’t know if it has a lock on it or not. You get to the cabinet and find that the cut-out is there for the lock but the locking mechanism inside of the box is missing. How do you put a lock on that file cabinet?

Your customer calls you and says he wants a second lock on a file cabinet so two people will be required to open the cabinet. One will have the key for the existing lock and another will have the key for the lock you install.

Your customer calls and wants to be able to open their file cabinet with the same key that fits their door to their office. “It’s just such a hassle to have to carry so many keys,” is something you will hear.

These are just three of the common scenarios you will encounter in the field. Sometimes the existing lock is broken or the customer just doesn’t trust “that flimsy lock” to protect their valuable information. The government has created a market for locks on file cabinets by requiring locks on confidential material like personnel files.

THE ANSWER:
Major Manufacturing Inc., has the answer for just the above situations as well as many more you could encounter. The answer is the external file cabinet locking bar that is locked with a padlock that can be keyed to their existing system.

The Major Manufacturing file cabinet locking bar is mounted on the face of the file cabinet by means of enclosed screws or can be mounted by pop rivets as well.

The locking bar is available in one to five-drawer lengths and is manufactured in both right hand and left hand versions, although the left hand mount is the most common installation.

The one drawer locking bar is also suitable for desk drawer applications since it measures 18–3/4 inches long. The two-drawer locking bar is 23–1/2 inches long, the three drawer locking bar is 33 inches long, the four drawer locking bar is 49–1/2 inches long and the five drawer locking bar is 55 inches long, so you can see there is a lock for most applications you will find in the field.

INSTALLING THE LOCK:
Installing the file cabinet locking bar is not difficult, but will require the use of a couple of tools, including a drill, tap, and a screwdriver, as well as a method to mark the location of the holes you will drill.

The most common locking bar I install is the four-drawer, but the two-door is very common as well. The four-drawer locking bar is held in place by five screws, four of which are concealed by the locking bar when the bar is in the locked position. The fifth screw is at the foot of the locking bar where a loop is there to hold the bar in place and prevent the prying of the bar.

The screw holes are beveled so the screws can be recessed and not interfere with the movement of the bar. It is easier to install the lock with the provided screws than with a pop rivet tool since the holes are located close to the slide bars that hold the unit to the attaching mechanism. You will have to tap the holes to use the screws, but that is not difficult.

USING THE LOCKING BAR:
Once the locking bar has been installed, it is quite easy to use for the customer. The bar is swung out of the way of the drawer by lifting it by the lift loop and turning it beyond the 90-degree mark and dropping it behind the catch that will keep it from swinging into the travel of the drawer when in the open position.

When the customer is ready to lock the drawer they simply lift the bar over the catch and turn it to be parallel with the face of the drawer. Slip the bar into the loop at the bottom of the unit and lock it with a padlock. Most padlocks will work with the lock, but if the customer has need for a bigger shackle padlock than can be installed in the existing hole you will need to drill the hole to be able to use their padlock.

The inside of the bar has a red tape that will let the customer know if the lock is open or locked by just looking. Since the lock swings out of the way it cannot interfere with the opening and closing of the drawer when it is opened.

CONCLUSION:
A product that does just what it is advertised to do. An excellent product that enables the locksmith to lock file cabinets that do not have the internal mechanism to lock them.

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Phone: 714-772-5202
Fax: 714-772-2302
Email: mail@majormfg.com
Website: www.majormfg.com
The ability to secure personal property has been a goal pursued by man for thousands of years. Wooden locks, metal locks, huge keys, levers, wafers, pins, cylinders, smaller keys, high security keys, ID cards, PIN numbers, magnetic strips, Prox cards etc... The evolution of locking devices and the means of activating these locking devices has evolved to the point that we often feel safe and comfortable.

What if someone copies your key or sees your PIN when you enter it? Where did I leave my Prox card? These questions and scenarios are all too common. Access is provided because of what you know or what you possess, not who you are. Is there a solution to these problems? Yes there is and it is called Biometrics.

Biometrics is concerned with the measurement and identification of individual traits and characteristics. There are many characteristics and traits that are specific to each human on earth. We all have either eyes, a hand geometry, fingerprint, iris, retina, voice, face, a vascular pattern or can write, but no two people have exactly the same characteristics with any of these traits. The differences between these traits are what identifies us as unique, and is readable and recognizable by a specific biometric device.

To get the answers to a few common questions about biometrics, I called a friend, Mark Ahuna, from Positive Identity Solutions out of Mooresville NC. Between Mark Ahuna, Tony Williams from Cansec and a few other sources, I got some very good answers to some good questions. Let's look at a few of these common questions and the answers I received.

**Question:**
What are the various biometric technologies that are available today?

**Answer:**
There are many mainstream products currently on the market, including, but not limited to: hand geometry, fingerprint, iris, retina, voice, facial, handwriting, and vascular pattern.

**Question:**
What biometric technology is at the forefront?

**Answer:**
Hand geometry and fingerprint have been around the longest and are the most widely accepted. Fingerprint readers are being used in a wide variety of applications.
Question:
How many points of reference are used to read a fingerprint? Does it vary?

Answer:
Minutiae-extracting products will typically compare 40-50 points. This does vary between manufacturers and what security level the products are set at. The higher the security level, the more points are being compared. Of course with a high security level there are extremely low chances of a false accept, but higher numbers of false rejects. You’ll find that manufacturers play the game of setting the security low so that the devices are more forgiving. The security setting should be considered by the end-user and set according to each application. Example: If the product is used for airport security then the setting should be high.

Question:
Can a severed finger be used on a reader?

Answer:
It is possible on many devices (not all) that a severed finger can be used. The weakest link in physical security is the door itself and not the device controlling it. Let’s be realistic. If someone wants through the door, there are easier ways to get through than cutting off someone’s finger.

Question:
If I cut my enrolled finger, can I still use the system?

Answer:
A severely cut or damaged finger can render a reading invalid. A small cut should not present a problem. A user can enroll more than one finger as a backup in case your usual finger is injured.

Question:
Is there a possible health risk?

Answer:
No! The methods used to gather the personal biometric data are non-invasive and pose absolutely no threat to physical health or well-being. When properly installed, biometric devices enhance both security and ease of access for the individual user. Since the 1980’s, when biometric systems were used for the first time, no health hazards have been reported.

Question:
Can biometric locks be used in outside applications?

Answer:
Most products are designed for inside use at this time. However, there are some products on the market that are weather resistant.

Question:
What is the average rejection, false/positive, or non-readable rates?

Answer:
Typical specifications are as follows:
* FRR (False Reject Ratio): “.1%”
* FAR (False Accept Ratio): “.001%”
* FTER (Failure to Enroll Rate): “.2%”

FAR should be extremely low, but is directly related to the security setting. All manufacturers quote the best specifications, but the product doesn’t necessarily get installed at those specs. If the security setting is low so that everyone gets through easily, then the chance of a False Accept are much higher. This may be O.K. for a gym, but not too great for an airport. Potential biometric customers should also realize that there will almost always be some users that can’t enroll for some reason. As long as the biometric devices have another authentication method such as a card or keypad, then the system isn’t useless because of these non-enrollable users.

Question:
Which technology is considered the best and why?

Answer:
That’s a loaded question to ask a manufacturer. Hand geometry and fingerprint have been around the longest and are the most widely accepted. There are newer technologies now on the market, but they’ll need some time to gain user acceptance and get the cost down to where fingerprint and hand geometry are today. Currently retina and iris devices are reported to have the best accuracy, but are far too expensive for the typical commercial application. The best technology is relative to how much you spend.

Question:
Are all biometric fingerprint readers the same? If not, what are the differences.
Answer:

No. Without getting too technical on matching algorithms etc., there are two main sensor technologies on the market. Optical and Solid State. The optical scanner starts with a visual image of the finger to extract data while the solid state sensor generates an electric field to image a finger. In my opinion optical sensors are better suited for applications where abuse may be a concern, as is with many access control applications. Since optical sensors have a thick glass platen for finger placement, they are very durable. In general, solid state devices tend to capture a better quality image, but are more prone to damage by electrostatic discharge and/or vandalism. Again it comes down to choosing the right product for the application.

Question:

How many users can be stored on average?

Answer:

If the biometric device utilizes a 1:n (one to many) approach, the number of templates stored in the unit itself is usually small, typically 100-200. If the template matching is performed on a PC then the processing power is there to match a much larger number of templates. However, in my opinion the best method of implementing biometrics is a 1:1 approach, whereby the unit finds the template via a user’s PIN or card for quick lookup and comparison. Using this method, the unit is only limited by memory capacity. Most units on the market today can store 2,000 to 4,000 using this method.

Question:

What’s the average access time?

Answer:

Obviously there is a human element involved; so much depends on the user. However a user will typically authenticate in approximately 500 milliseconds, but this does not include entering a PIN, image capture, or any time required by a host access control system.

Question:

Where are biometrics used today?

Answer:

At the moment biometric applications can be found in many different areas, such as border control, secure computer networks and financial transactions as well as access control or time recording. Available products range from door locks, safes, PC system, computer mice, keyboards, web cameras, time and attendance check.

Question:

What advancements are on the horizon?

Answer:

Many products are starting to emerge with advanced features such as “live” finger detection. Aside from that I think we’ll see many new forms of biometrics like vascular pattern recognition, although the newer technologies will need time to mature as did their predecessors. I think we’ll see technologies such as facial recognition have their moment in the sun. There’s nothing new with the hardware as it’s just processing power and a camera. The software just needs to perform at acceptable standards.

Question:

Is biometric technology the future?

Answer:

No. I would say biometrics is the present. Toshiba now offers laptops with built-in fingerprint scanners while Microsoft sells a PC Logon scanner for about $40. I (Tony Williams) personally use an iris scan unit to clear Canadian customs under their frequent traveler program. Prices are dropping as demand and production increase, so biometrics will continue to grow at a rapid pace.

Question:

Will biometrics kill the key, card swipe devices, or prox devices?

Answer:

I would say yes, but not for quite a while yet. Remember, we’re still using magnetic stripe technology...
everywhere because the cost to switch is considered too high. Do you think our ATM cards are still using magnetic stripe because it’s so secure? I think not.

As I am sure you can see from the answers to the above questions, biometrics is not going to just disappear. It is here to stay. I had no idea that iris scanners were already in regular use for frequent travelers that go to Canada. Embrace the future and it will set you free.

This is a biometric transponder form SimonsVoss Technologies, (see photograph 1). Up to six authorized fingerprints can be stored in the transponder. The user pushes the button and then smoothly swipes the finger across the sensor. If the fingerprint read matches one of the authorized fingerprints, the transponder unlocks the door or activates control of a wide range of equipment as authorized by the system administrator. If the transponder is lost or stolen, it can easily be disabled and a replacement issued without the expense of mechanical changes to the lock. And even if the loss is not discovered for some time, nobody but those with the authorized fingerprint can use it. Each transponder can be programmed to provide different levels of access at different times of day across multiple SimonsVoss lock systems.

Here is the PRX-2000 from Protex Safe Co., (see photograph 2). It is a standalone biometric lock designed for use in homes, apartments and small business.

Cansec’s Zodiac Max Fingerprint Reader is the perfect solution for eliminating the cost of conventional access cards while implementing the highest level of security available for up to 4,000 users, (see photograph 3). With a built-in keypad and LCD screen, Zodiac Max provides a simple and intuitive interface for both administrators and users. Authentication is performed by first entering a 4 digit Personal Identification Number (PIN) followed by the presentation of an enrolled finger. By using 1 to 1 authentication, Max will always authenticate users quickly and eliminate the possibility of false acceptance. Zodiac Max can operate in either Stand-Alone Mode for simple applications or in PC Mode using the included software for template management.

The ekey TOCAhome is a standalone keyless entry system that consists of a weather resistant fingerprint reader (shown above) and a control panel. It uses 1 to many matching for up to 99 fingers, (see photograph 4).