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— page 126 —

November 1995
Volume 66, No. 11

ELECTRONIC SECURITY

plus...

➤ Conquer Alpha Tech
In 15 Minutes
page 30

➤ Beat The Heat In Fire
Rated Hardware
page 60

➤ Install S & G's New
& Improved 6120
page 66

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On The Cover

Big bucks in electronic locks. From top, Dynalock electromagnet, Gardkey keypad/card reader, H.E.S. 1003K strike, and IEI keypad.

**Click on the article
you wish to read**

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Commentary

At the tender age of 23 years old I started in this industry as a rep selling to distributors on the East Coast. One of the first people I met was a man named Stan Maziuk, Sr., president of Maziuk & Company Inc. of Syracuse, NY.

Stan was a man who knew this industry inside and out, yet he was also a man who loved people, telling stories and looking toward the future. Stan was a gentleman, an entertainer, and one of the founding fathers of the locksmith industry as we know it today.

At the ALOA convention in July, I chatted with Stan Maziuk, Jr. who told me his father had been in the hospital for some time. Having just changed rooms, Stan Sr. bluntly informed his son that he immediately needed a phone line installed in his hospital room, he requested computer reports from the company, and a stack of business cards.

Stan Maziuk, Sr. loved locksmithing and he loved being involved. I don't think it was the inventory on the shelf that kept Stan's attention all these years. I think it was his love of people that made Stan a special man.

On September 3, 1995 Stan Maziuk, Sr. passed away. Maziuk & Company is guided by the steady hands of Stan Maziuk, Jr.

But I'm going to miss the old man.

Here is some further information for those of who who have had questions about your subscription to *The National Locksmith* in relation to your previous subscription to the Reporter.

First, if you were Bonded through the Reporter, yes, we are honoring the Reporter's Bonding, so you are still Bonded. However, we are not issuing new Bond Cards. Your Reporter Bond is good until your Reporter subscription would have expired. After that, when you renew your subscription to *The National Locksmith*, and if you choose to be Bonded by us, we will issue you a new Bond Card in the name of *The National Locksmith*.

Second, if you are curious about any extension made on your subscription to this magazine, here is an easy method to check your expiration date. Simply look at your magazine mailing label from this issue. On it is printed a date and a year. That is the month of your last issue. So if your label says SEP96, then your last issue will be the September issue of 1996. If you have any questions, feel free to call our circulation desk.

By the way, you may be interested to learn that *The National Locksmith* is now the magazine with the largest paid circulation of any magazine in the industry!



Marc Goldberg
Editor/Publisher

**Farewell
to a friend...
Stan Maziuk, Sr.**

Marc Goldberg

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Use the Internet address if you are not on AOL.

NOVEMBER 1995

Letters

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.



In Memorium

Stanley J. Maziuk, 83, died September 3, 1995. He was founder and chairman of Maziuk & Co., a wholesale locksmith supply firm in Syracuse, NY.

Stan's association with the industry is a long one. At age 16 he began working for Yale and Towne in Stamford, Connecticut. His interest quickly turned to bank vault and time locks, eventually traveling throughout the northeastern United States as a field representative and troubleshooter. A desire to own his own business came to pass in 1943 when he founded the Syracuse Safe & Lock Company. The

service side of the business was subsequently sold, and builder's hardware items were added to the locksmith supply inventory of what was to become Maziuk & Co.

He was a member of the National Locksmith Suppliers Association, Associated Locksmiths of America, founding member of the Central NY Locksmiths Association, and Charter Member (#1) of the Safe and Vault Technicians Association.



Safe Parts Wanted

I can't get enough of *The National Locksmith*! As one of the "little guys" often referred to in the magazine, I have gleaned plenty of tips, ideas, and just plain good

reading from your magazine. I am currently employed by the state government as the locksmith for a MR center. While I have seen many articles on modern lock systems, some text on the older locks still in use would be helpful. Specifically, anything on the 1950's cast iron Yale 8300/8400 series. Any parts available out there? I also run my own business "after hours," and have used several tips to shorten the work time on many jobs. I was glad to see the commentary on AOL. Keep up the good work!

Richard E. Cybrynski
E Mail

Learn By Doing

I particularly enjoyed Dave Franchuk's article "Safe Moving the Smart Way." (July 1995, page 170.) About 10 years ago I moved my first safe, an 800 pounder. I rented a truck

and hired a high school kid to help me. We strapped it to a refrigerator hand truck and wheeled it out of a garage.

When we got to the driveway, the slope away from the garage made it difficult to control. We laid the hand truck on its back and slid it to the ramp on the truck. Since the driveway was so steep, the ramp was nearly flat and we had no trouble getting the safe up the ramp. Then we hit the lip at the top of the ramp. After some tugging and shoving, we were over the lip and onto the bed of the truck.

Then I panicked. The truck was on an even steeper part of the driveway and the safe was now rolling forward. Fortunately, the kid jumped out of the way. My hands froze to the hand truck, I took a few steps and then dropped to my knees, letting the handtruck fall to the floor. I got about half way down the bed of the truck and decided to let go. The safe kept going and smashed into some boxes at the front of the truck. The

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Attn: Editor

safe was fine, and, amazingly, the truck was undamaged. I learned a lot that day.

*Jeff Boone
E Mail*

Light Surprise

The pinning light fixture tip in the July Technitips column has been around for a long time. It was designed by Pat Sullivan as the "Magni-Light Loader." I own one. Patent pending, maybe a patent now.

Good job, but it's not new. I guess everyone knows Pat Sullivan. Ask him.

P.S. I know you won't print this and I won't be renewing my subscription. We have been through this before.

*Dick Ingeman
California*

Editor's Note: Well Dick, I hope the shock isn't too great for you when you see your letter in print! There's a phrase that says there's nothing new under the sun. So I'll believe you when you say this tool has been previously manufactured, but at least the tip gives the method to make your own. Making a tool out of scrap lumber doesn't infringe on a patent. Oh, and we'll look forward to your renewal!

Put Manufacturers On Call

I would like to bring to your attention a serious problem in our industry (and many others) that seemingly has no solution as of yet.

As a locksmith and door company, we order product from a multitude of suppliers and manufacturers. Occasionally, out in the field or after it has already been installed, it is discovered that said product is defective. Therefore, we have to return to the work site a second time once replacement product has been received, with gracious apologies from the supplier/manufacturer.

The problem: Who pays for the return service call? Surely not the customer, who is the innocent victim in this situation. Unfortunately, neither does the supplier nor manufacturer. Their obligation is fulfilled by replacing the defective product. It is you and I, the service company, that unfairly assumes the cost. Essentially, we are punished by the supplier/manufacturer for using his product. Furthermore, we look inadequate in the eyes of the customer for supplying him with defective product.

The solution is not as easy to decipher. If the supplier/manufacturer assumes the cost of the second service call, surely product prices would rise to cover the loss. If the independent service company assumes the loss, the financial burden could result in fewer independent service companies.

The most obvious solution is to not make defective product. However, we do not live in a perfect world and mistakes do occur. Perhaps the manufacturer should assume some responsibility for his product and, at the very least, offer additional product at a discounted rate (or some other remuneration) under these circumstances. This would appease the service company and promote the manufacturers product.

Any other suggestions?

*Rhonda Blanchard
California*

Editor's Note: Rhonda, needless to say you're not alone. Still, as a business, this is part of the liability we accept. On the other hand, there are two ways that we can protect ourselves. First, is to use product from reputable companies. As even they go through phases of "quality enhancement," be prepared to contact the

company involved, and, if not satisfied, change! When enough customers (locksmiths) leave for better product, that company either changes or goes out of business.

Second, many U.S. manufacturers are now per using ISO 9000 certification. Unlike U.L. Listing and ANSI ratings, ISO is a quality standard ensuring that a certified company implements a system of quality assurance for their products. It should be noted that ISO does not certify or rate the product! Instead, it makes sure that the certified company has instituted programs and systems that keep a close watch on the way a product is manufactured, packaged and shipped. What it comes down to, is that when you purchase a product from an ISO certified manufacturer, not only do you get product that works as advertised, but that you get all the components (nuts, screws, instructions, etc.) that are supposed to come with that product. The reason for many manufacturers not jumping onboard the ISO bandwagon, however, is that it is an expensive and extensive endeavor. Many companies to whom I have spoken, have taken years and spent tens of thousands of dollars to develop and implement the programs and systems necessary to meet the ISO standard.



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You Missed Us

I refer to your excellent article in the August 1995 issue titled "Lining Up Electronic Distributors."

It saddened me, however, that we neither were named in the article nor in the listing at the end of the article. We have been pioneers in the electronic access field and we have several members on our staff who provide technical services to hundreds of installing dealers. We are one of Locknetics Security Engineering's major national customers.

Hopefully, you will keep our contribution to the industry in mind when that subject is again discussed in your publication. If you noted the omission of our name from the listing in a future issue, that would certainly be most appreciated.

Mayflower Sales Co., Inc.

Bill Swetow, Pres.

Editor's Note: We're truly sorry, Bill. Next time the subject is covered, you can be sure you'll be contacted!

Movie Premier

It was great seeing my article in July's issue of *The National Locksmith*. Thanks for putting it in. (July 1995, page 114.)

To update you on the movie, it was released on August 4th. The title is "Something to Talk About." I went to see it last night and I am glad to say I did make it in the final version. The scene is pretty short and you almost have to know it's coming up to recognize me, but I made it. Can't wait for it to come out on tape so I can check it out in slo-mo. Talk to ya later and thanks.

Craig Ostrander
E Mail

No Cover?

I received my copy of the August 1995 *The National Locksmith*. I was somewhat surprised that the magazine was not in the sealed plastic cover as it has been the past few months. Have you stopped putting the magazine in the wrapper, or is it that the wrapper somehow got ripped off? I am sure that you will agree that the information that is in *The National Locksmith* is not for everyone.

Your taking the time to research this is greatly appreciated.

Paul's Security
E Mail

Editor's Note: No question about it, the information in *The National Locksmith* is meant for your eyes only. The egregious error of not putting it under cover was committed by the printer, who has since then, assured us it won't happen again!

Cam Lock Coverage

As an advertiser, we usually flip through your magazine, just to see what we may see. Admittedly, most of the technical information just goes over our head. But your recent article on cam locks caught our undivided attention. After reading it, we would like to comment on another significant place these locks are used.

These comments are pertinent to your readers. I cannot tell you how many locksmiths have called, since we began advertising in *The National Locksmith*, who have told us that they have turned away business over the years for lack of a source. We produce the coin boxes, and stock in the locks for coin operated laundry equipment.

These locks differs slightly from the usual Double "D" 3/4 barrel. The stem on the end is a 9/32-28 threaded stud. This is the most common lock format for all commercial washers and dryers, and some amusement and vending machines. But what it is hung onto, the stud, can lead to some real headaches.

Most top load equipment (i.e. machines that differ from domestic machine only in the addition of a meterhousing) will use a standard coin box. The notable exception is the Maytag line, which uses an extension with a 1/4 turn roll pin. There are also a few models which use the Guardian style box. This is true of some few GE, and Whirlpools, and many Kenmore machines.

Large front load machines, both washers and dryers, can vary widely. They also can vary according to which year the machine was made. For instance, Huebsch dryers made before January 1st, 1994 will use a threaded extension, but machines after that date will use the standard coin box.

If the machines which use standard mount coin boxes are to be rekeyed, it is generally more economical to replace the entire box, rather than tear one down, and rebuild it with a new lock. Stack tolerances frequently require special shim spacers, especially when going from one make of lock to another.

Some boxes require locks of a

specific make, and cannot be switched to a different lock. For instance, a Greenwald Hide-A-Key type box, must use a tubular cam lock with the extended shank key. It cannot be easily converted to Duo or Medeco.

A standard coin box can be inexpensively replaced. But boxes for those manufacturers who march to the beat of a different drummer offer a different challenge. The strongest warning I can offer is do not use a hole saw to core out a lock on these boxes unless you know you can replace the box. When in doubt, attack the lock directly. It is nearly impossible to locate the box for some of the older machines. And some of the current production boxes have ridiculous replacement costs.

I have enclosed our catalogue, open to the section showing the more common extensions. It also details how to define the extension if the make and model are uncertain. We can and do make "one offs" for people who have some brand of equipment which is no longer produced. We also have the service door locks for most commercial laundry equipment.

Please examine the catalogue, and the other materials enclosed. If you wish to offer your readers a digest of the information above, that is fine. Or, if you wish, Peter Bigner, our Director of Sales, and I will try to compose a compact article detailing some of the more obvious (and some of the not so obvious) peculiarities of coin laundry service.

There is no reason why a laundry operator should not get full service from their local locksmith, rather than having him come to a stop at the front door. Also, consider that 600,000+ coin operated laundry machines are produced each year. They have a service life of from 10 to 15 years. At any given time, there are around 10,000,000 of these machines in service, each with at least two locks! It may not be automotive, but this is still not an insignificant number. Why should the laundry equipment dealers get all of the repeat business?

If there is anything you would like from us, please do not hesitate to call. After all, we succeed only if the people in the field succeed.

Norman A. Martin
Corporate Administrator
The Monarch Tool & Manufacturing Co.

Editor's Note: Thank you, Norman. I'm definitely going to take you up on your

article offer. In the mean time locksmiths can get that informative catalog you sent me by calling you at (800) 462-9460.

Axxess

Another periodical had recently reported on a new key cutting system called AXXESS. If I understood correctly the machine had the ability to decode your worn key and return the key to factory specs.

A pretty good trick any way you look at it. Possible yes, but not without some special extra programming in each case. Such a machine would have no way of knowing whether to cut plus or minus unless told to do so, not to mention all the custom pinning we do to remove the customers from existing manufacturer key specs.

Anyway, I did not run up the flag of surrender.

I saw one of these machines in an Albertsons store in Las Vegas the other day. I clasped my hands in glee and promptly had my Ford 5 pin ignition key copied. Due to the tolerance in a 5 pin Ford not much of a challenge normally. But this was a copy of an impressed key that I have the girl to copy.

Results were that on side turned smoothly, the other real tight. The spacing was off a bit and one pin was

marking deeply.

Had I given the girl a 10 cut Mazda second generation or similar key I no doubt would have gotten my money back, which by the way was \$1.49 plus tax.

Though we should stay aware of what's happening in the trade I do not believe we should take all of "the sky is falling" articles to heart.

*Ron Ryder
Nevada*

Grow Up!

In response to the letter entitled "Lockout Dependent," I say to the writer, GROW UP! ("Letters To The Editor," July 1995.) If you live in a glass house you shouldn't throw the first stone. You're a grown man. Try to act like one.

For five years you have cried to anyone who would listen. You've written letters to the local police department about me and my husband. You cried to SCLA about my being retired from the military. You ran radio ads telling the public that you were the only master locksmith in this county. You know that is pure bull.

In your letter you stated that you have to put up with an ALOA/SCLA member who has a police radio and that the member

was forced to buy a city license even though they lived in the county. How ironic! When you had a police radio that was okay, now that the shoe is on the other foot, you're throwing a temper tantrum. As far as the license goes, nobody forced me to purchase one. It is a requirement to do business in the city. If, as you stated, you decided to ignore the cops, why did you write a letter offering to hold car opening classes for the police.

What is your problem? Are you paranoid? Is it competition, or is it FEMALE competition that you can't stand. I advise you to GROW UP. If that seems to be a problem, I will try to find some Pampers and a pacifier for you!

I do my job and I do it well. I don't worry what other locksmith shops are doing or what they have that I don't—so why are you so worried about me and my business? (You don't pay my bills!)

Some things can be inherited but good reputation, trust, and respect must all be earned.

Proud to be an ALOA member.

*Angela (Angie) Groves
S. Carolina*

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Reed Report



Bill Reed

Scattershooting while wondering whatever happened to ... Shel McDonald

- I went about two months without anyone being able to get in touch with me. That makes it real hard to write this column when not talking to locksmiths. I want all the associations to start sending their newsletters to me at: PO Box 814713, Dallas, Texas 75381, or you can phone me at 817/481-5455.
- Just talked to Hank Spicer and he is working real hard on #5 of his Hankman series. You'll be hearing from me soon on a special offer.
- TRUST Organization is alive and well, so you members out there hold on. You'll be receiving information periodically from me. This organization is going to be tied in to making more money for locksmiths. I have big ideas, so you'll be hearing from me soon. (If you haven't already).
- The Spy Supply stores seem to be growing. These are the stores where anyone can walk in off the street and buy picks, car opening tools and other items used by locksmiths. They also sell many "how-to" books. We are beginning to get legislation now, such as Illinois, so I think this should probably be their first mission - clean up the stores. Easier said than done.
- I'm going to try my best to come up with an all new TRUST seminar program for 1996. Steve Young and I will be working on it and hopefully we'll be making an announcement real soon. Then I will ask all interested associations to contact me to set a date.
- And speaking of associations - there's one thing I'm still very aware of - associations and their problems. Slow, if any, growth, no money, hard to get programs, hard to find workers. This is not just an association problem, but an industry-wide problem. I am going to try my best to attack this problem head-on and work with the associations. Since I'm not sure what I'm going to be doing, I can't make any firm commitments right now. However, I will promise this. The company I eventually end up with will encourage association membership, and promotion of the locksmith or I'll find something else. Our industry MUST do this, or die. I'm not ready for it to die.

Yours For Better Security,

Bill Reed

VIEWPOINT: Don't Let The "T" Word Scare Ya!

Linus Yale's pin tumbler lock and GM's in-column ignition lock were the technological equivalents of today's high tech, electronic and electro-mechanical gadgets - Nothin' to be afearred of!



by Jake Jakubowski

We see and hear the word, "technology" a lot these days. It seems as if you can hardly turn on a TV news program, an educational program or a good, old-fashioned good-guys-bad-guys program without being shown, told or sold on the idea of some sort of "the latest technology."

Even our trade magazines are full of the word technology. Articles on "The Latest Electronic Lock Technology" or "Technology For The Locksmith In the 21st Century" are representational of the use of the word "technology." Shucks! Even this ole boy has been known to throw the "T" word around in an article occasionally.

I reckon that the word technology has been used so often by so many authors that it has sort of taken on a kind of ominous meanin'. Like: "If you don't watch out, technology's goin' to git ya!" Just think about it a minute. The word has been used so often, some folks're liable to have the idea that if they can't handle the NEW technology, they're gonna be doomed to becomin' like history or someithin'. Don't believe a word of it!

The only thing that today's overuse of the "T" word means is: Things are

changin'. Sure, they're changin' quicker then Granma'll let go of a hot biscuit pan. But that's all that's happenin' - simple change - period! An' the only way technology is goin' to git us is if we refuse to take advantage of the changes as they occur.

I know as well as anyone that change can be a little on the scary side sometimes. After all, to change, we have to let go of the comfortable and familiar and learn to embrace the unfamiliar. 'Sides, if it weren't for technological changes in this industry, there'd be a whole heap fewer of us in this business then they is raht now.

What I'm tryin' to illustrate is the fact that if Linus Yale had not invented the pin tumbler lock and the paracentric keyway, those of us that could call ourselves locksmiths would be hand-forgin' ar' own lock parts and tryin' to figure out how to fancy up the wards in the new lock we jes' made to keep too many keys from operatin' it!

You see, Linus Yale's contributions to the locksmith trade were the technological marvels of their day, just like the Egyptian Lock was the technological marvel of 4,000 years ago; and access control units made by Securitron, Omni, Locknetics and

others can be considered the technological marvels of today's rapidly changin' access control market. At the very least, electronically activated locking devices like, those mentioned, should be looked upon as just the next generation of change that we need to learn to deal with.

Chew on this for a minute. Any electronic access control unit like those mentioned - particularly if they are keypad programmable - are truly a technological marvels since individually, they have more computing power in their central processing units then was available to the entire world prior to 1948! Now, that's truly marvelous; and it's technology and it didn't waste any time gittin' here.

Jes' thirty years ago, if you could find a locking mechanism that would do what one of these locks can do today, the CPU board would have probably been as big as a refrigerator. How'd you like to try mounting something like that on a door?

Let me get away from locksmithin' for a minute. If you stop to think about it, you will quickly realize that

Continued on page 14

Continued from page 11

before 1948 personal computers, cellular phones, Velcro, microwave ovens, fiber optics, Walkman's, solar-powered calculators, the interstate highway system, portable telephones, digital pagers, fax machines and a thousand other gadgets and gizmos that we see, use, buy and sell everyday did not exist! That's a whole lot of change and it's technology that made it possible.

If it weren't for technology and the changes that technology has brought us, we could not sit in our service vehicle, talking on a cellular phone to a supplier eight states, two mountain ranges and one major river away. We wouldn't be able to fire up a lap-top

computer or PC to get the information to generate a key by code. To put a little icing on the cake, so to speak, if it weren't for technology, we wouldn't have code cutting equipment like HPC's or Framon's.

So keep in mind that the only thing you need to know about technology is that you must take advantage of it. In order to take advantage of it, you need to learn how to do things just a little differently than you do now. You see, the folks that are using cellars, laptops, PC's and state-of-the-art code cutting equipment are simply taking advantage of positive changes that have been fueled by an ever-growing technology. By adapting to, and utilizing, these technological changes, savvy locksmiths are restructuring and

rethinkin' their approach to the way they do business. And, by doin' so, they're increasing their bottom line (that is, their profits).

Why? Because it became feasible (Or, perhaps, even expedient!) for them to do so. The technology was developed, made available to the trade and was able to help those who accepted it make more money. Simply because they were willing to embrace a new idea, accept change or profitably utilize a new and different piece of equipment or learn a better way of doing a tedious job.

It didn't matter whether the change consisted of using a computer to obtain code information or to generate a master key chart or using a new type of boring jig to install a deadbolt quicker or installing and servicing an electro-magnetic lockset, a PC-based access control system in a multistory or multi-location industrial complex, commercial facility or a 200-unit apartment complex.

When General Motors introduced their "new" technology (the in-column ignition switch) a lot of locksmiths were reluctant to tackle the disassembly of the steering column to service one of these new-fangled locks. Today, even a beginner seems to take steering wheel tear-down in stride. When Ford introduced its 10-cut ignition system in 1984-1/2, the response in the trade was less than enthusiastic. Today, most locksmiths service these locks without giving it a second thought.

Jes' look back on what has happened in the last decade in this business. High-security locks that sent locksmiths runnin' are now being regularly serviced by those same locksmiths. Mechanical access, electronic access, and good ol' key access systems are, or were, the technological marvels of their day. Today's locksmith handles them all on nearly a daily basis because they made an effort to change with the technology. Besides, every time a product is invented or improved by newer technological pressures or demands, someone, somewhere, finds a way to install, service, bypass or improve upon it in a heart-beat.

Like I said earlier, technology is jes' change. Change is growth. And, growth ain't nothing' to be afear'd of! Technologically speakin', that is. Y'all heah me now? **TNL**



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1. Wolo's on Guard steering wheel lock.



2. The design is simplistic and clean.

by
Tom Lynch

WOLO Manufacturing Corp. of Deer Park, N.Y. (800) 645-5808, has introduced steering wheel lock called "on GUARD" WB90. It is made of solid welded steel, and is brightly colored in yellow and red to provide maximum visibility. The lock cylinder is made of solid brass utilizing a 5 pin tumbler design. On the face of each cylinder is a printed code. The cylinder is housed within a hardened steel collar to provide protection against attack. It is package in a blister pack that is very appealing and is printed with sales features listing its benefits. (See photograph 1.)

The appearance of this wheel lock is clean and simplistic. It's paint finish gives an appearance of quality. The plastic coating over the portion that rests on top of the dashboard is durable. (See photograph 2.)



3. The keys are double sided. Obtaining copies from Wolo takes two weeks.

The keys host a large bow for easy handling, are made of brass and are a double sided convenient style. Code keys can be obtained by mailing the code number to the address printed on the rear of the blister pack. The cost for two keys, including postage and handling, is \$8 U.S./ \$12 Canadian. A two week delivery time is quoted. (See photograph 3.)

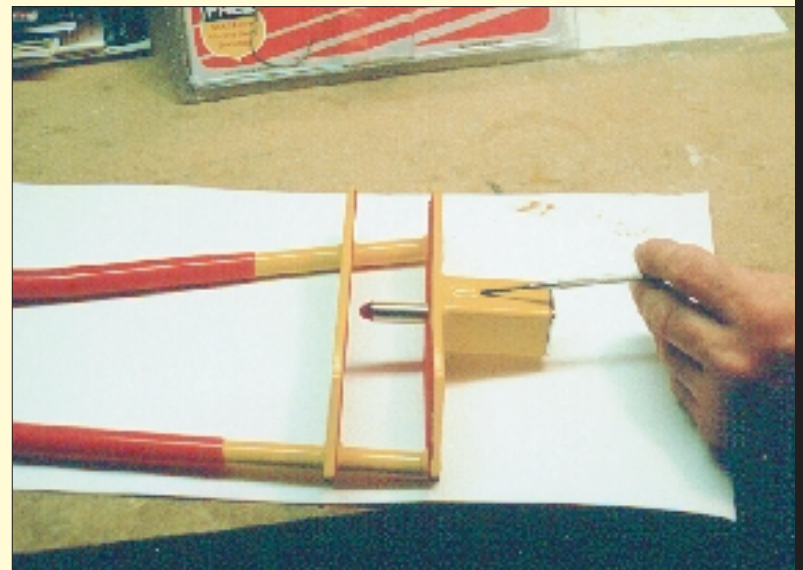
on GUARD's use is as easy as stated on the packaging. It is easy to handle, position and lock. (See photograph 4.) Storage was by far more convenient than it's competitors. It slipped nicely under the passenger seats of the vehicles I tested. Locking the device was a breeze. With one push on the face of the cylinder I was able to engage the locking pin. No key was needed. Unlocking was just as easy; even though the cylinder was now recessed deep into the protective housing, I had no trouble inserting the key.

WOLO has produced a product that offers visual impact and ease of use. Their packaging lends great appeal to the end user when contemplating purchase. They have even included a window decal in each package. The list price made available to me was approximately \$41.95. The sales features printed on the packaging state that it is better than the best, so I naturally took that as a challenge and began to investigate it's serviceability and resistance.

I began by installing the wheel lock on several different vehicles. It's ease of installation was constant, but it did not completely immobilize the wheels from turning on



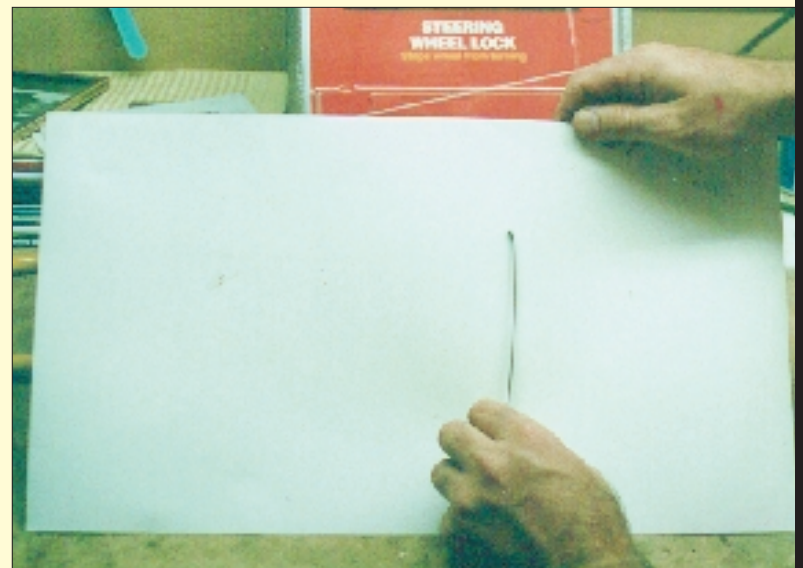
4. on Guard installed.



5. The "bump" found on the bottom of the lock housing.



6. A channel found in the lock housing is for the spring operated plunger.



7. An opening tool can be easily fashioned using spring steel.

Continued from page 16



8. Use the tool to depress the cylinder's plunger and unlock the lock.



9. The whole cylinder can be removed from the housing.



10. With the cylinder removed, the plunger is visible.



11. Demonstrating how the tool depresses the plunger.

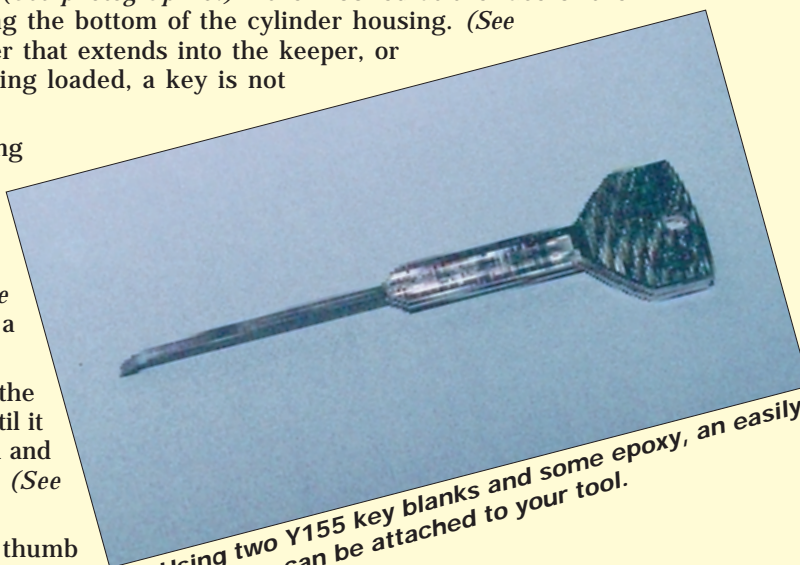
all vehicles. As a matter of fact, I was able to turn the wheel enough so that I could slip it off the dash. Once off the dash, I was able to maneuver slightly; but not without cracking myself in the knees or slamming the device into the dashboard.

While deciding what method I was going to use to attack the cylinder I discovered a "bump" on the bottom side of the steel cylinder housing. (See photograph 5.) I then looked at the face of the cylinder and discovered a channel running along the bottom of the cylinder housing. (See photograph 6.) This channel is for the locking plunger that extends into the keeper, or "bump" as stated earlier. Because the plunger is spring loaded, a key is not needed to depress it.

To make a tool to do this, take a piece of flat spring steel that fits nicely into the channel (1/8" worked great for me). Then bend the tip slightly; approximately 20 degrees. It must be able to clear the cylinder body when sliding down the channel. The bend should be approximately 3/16" in length. (See photograph 7.) Now take a file and file the bent tip into a chisel cut.

With the tool formed, grasp it firmly and place into the channel of the cylinder housing and slide it forward until it hits the plunger. Push in and the plunger will be raised and the cylinder will pop out, opening the wheel lock. (See photograph 8.) This is as fast as using a key!

When retrieving your tool out you can place your thumb over the face of the cylinder and pull out. If you pull your tool



12. Using two Y155 key blanks and some epoxy, an easily made handle can be attached to your tool.

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Continued from page 18

out and pull on the cylinder at the same time you can completely remove the entire cylinder and locking pin from the housing. (See photograph 9.)

Once the cylinder is removed from the housing you are able to see the spring loaded plunger that locks the cylinder in place. (See photograph 10.) You can now fine tune the angle of your tool by laying the spring steel flat on the cylinder and press the tip against the plunger, matching the angle of the slope. (See photograph 11.)

With the cylinder removed you are tempted to try to disassemble to make a key or to key alike to another lock. This cylinder does not appear to be serviceable nor profitable to bother. The cylinder body has a thin aluminum sleeve slipped around it and pressed into the rear of the brass body. This sleeve holds the inside of the cylinder together, if removed you will damage it and not be able to repair it. This sleeve or cover can be seen when the wheel lock is unlocked and the cylinder is extended from the housing.

To make removal of the cylinder using the method I described, a bit more comfortable I have taken a Y155 key blank and spread some five minute epoxy over the millings. Take your tool and cut it's length to 3-1/4" from the tip. Place the spring steel into the center milling of the Y155 blank; now take a second blank and also apply the epoxy. Lay this second blank on top of the first and clamp with vise grips, table vise, etc. Let harden and you now have an easy to grip tool that you can hang on your peg board and not lose! I used the ESP Y155 because of the bows finish, it looked good and it works. If after many uses you find its not working as well as before, just sharpen with your file. (See photograph 12.)

Keys can be duplicated using the original WOLO blanks, but if you don't have then when the need arises then use Ilco X184, EZ#B70.

Another model made by WOLO is the SECURITY PAL. It is the same wheel lock as "on GUARD" except it comes with an alarm that plugs into the lighter and it comes with a \$1000 guarantee toward the theft portion of your insurance for one year from date of purchase.

As more and more of the well-made Mas-Hamilton X-07 locks appear on the market and in use, especially by the U.S. Government, we are discovering problems with the earlier model locks. Mas-Hamilton originally had some problems with the magnet on the reverse side of the drive cam that triggers the reed switch in order to allow the lock to be opened. This has been corrected on all locks manufactured after late 1992.

If you should run into the situation when an X-07 lock, after the correct combination has been dialed, shows the OP with the right arrow and yet the bolt does not retract, there are several things you can do. The immediate action is to simply pull out on the dial, thereby moving the magnet closer to the switch and allowing the contacts to close.

If this doesn't work, due to lack of sufficient play in the dial or for some other reason, you then must get out your trusty rubber mallet or dead-blow hammer. While turning the dial to the right, lightly hit the face of the container at the two o'clock position. This should cause the drive cam to rebound allowing the switch to make momentary contact and the lock to open. If this doesn't solve your problem, you very likely are faced with a pesky stepper motor which is not working properly.

Some of the earlier stepper motors had a motor gear that would fail to move completely from the locked to the open position when the switch contact was completed. The original recommended procedure, which worked about half the time, was to physically damage the dial, requiring replacement of several parts. The procedure consisted of cutting off the dial, removing the dial ring assembly cover, the Zero Insertion Force (ZIF) seal (if it has one), the cable retainer, and the tube retainer. Then you take a hammer drill and a 1/4" drill bit. Drill at the five o'clock position on the face of the dial ring. By so doing, you are hammering directly opposite the stepper motor, which will some times jar the motor gear and cause it to move into position, then allowing the bolt to be retracted.

This technique is expensive and requires replacement of the dial ring, the dial, the hub, and the spindle, as well as replacing the stepper motor itself. In the situation where this did not work, you still had to replace the

That Cantankerous Stepper Motor

Here's a little tip on opening some of the earlier X-07 safe locks suffering from stepper motor problems.

by Don Shiles

above listed parts and then drill the container or the lock.

I have recently encountered two of these early locks, serial numbers in the 3000 range, with this stepper motor problem. By luck and experimentation, I discovered a way of compensating for the stepper motor problem. When the stepper motor fails, the motor gear is moved from the locked position and only moves halfway towards the unlocked position. It is more-or-less floating in limbo. Only after trying the two techniques listed in the first two paragraphs without success should you try this technique.

Dial the correct combination. Once you receive the OP symbol with right arrow, try pulling out on the dial and lightly rapping with the hammer. If that fails to work, you can assume the stepper motor is weak and the lock will not open. Before the lock powers down, take a fairly large dead-blow hammer and strike the face of the container at the five o'clock position as hard as you can while turning the dial to the right. You may have to hit the container several times.

Don't be afraid of using excessive force. The only damage you can cause, as far as I can see, is to damage the stepper motor, which has already failed. This causes the motor gear to pivot and, in every case I have tried so far, causes the motor gear to bind

against the drive cam and lock up the dial. The dial will not turn at all; do not attempt to force it. Simply tap on the face of the container in the same position. The light tapping will cause the motor gear to shift slightly, allowing the gears on the drive cam to mesh with the motor gear. Then by applying clockwise turning pressure the lock will retract.

You will find this procedure will probably only work one time, so once you get the lock open, you must replace the stepper motor, which was defective to start with. I can't guarantee this technique will work every time, but it has worked every time I have tried it. I don't want to give the impression that the X-07 lock is prone to failure or problems. There were several early problems, which the company has apparently resolved; however, a lot of the earlier locks are in use and we are going to run into some of these problems. If we can solve them easily with a dead-blow hammer, some judicious exercising of force and, an application of our knowledge of the equipment we owe it to the industry and ourselves to do so.

If anyone has had any other experiences or techniques they have discovered which work well with the X-07 lock, I would very much like to hear from you. Contact me at *The National Locksmith*, 1533 Burgundy Pkwy, Streamwood, IL 60107.

Tanner Bolt & Nut Tamper-Resistant Anchor

Tanner Bolt & Nut Corporation has introduced the Secure-Bolt™ tamper-resistant sleeve anchor in both button and flat head styles.

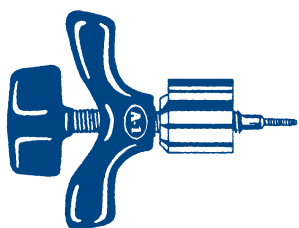


The Secure-Bolt™ is the first off-the-shelf, one-piece tamper resistant anchor available in the marketplace. It combines the versatility and ease of installation of a sleeve anchor with Torx® Security tamper-resistance to create an anchor that can be used to meet a wide variety of application requirements. It is currently available in 1/4" diameter through 4" length and 3/8" diameter through 6" length.

Tanner also offers Torx® tamper-resistant alloy steel cap screws, case-hardened self-tapping screws and self-drilling screws with zinc plated coating.

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GM Plug Puller By A-1



The G-Pull plug puller from A-1 Security Manufacturing Corp. pulls most General Motors trunk and deck plugs

in seconds. The tool can also be used on some foreign autos and removable core padlocks and desk locks. Since the G-Pull doesn't touch the auto body, locksmiths don't need to worry about scratching the paint or bending the body.

For **FREE** Information
Circle 261 on Rapid Reply

Harrison Electronic Systems Hellfire 350

Harrison Electronic Systems, Inc. presents a new addition to the HellFire line, the HellFire-350. This price-

transmitter, scan deterrent receiver, Tamper Memory, automatic rearm, "Quiet Control" chirp delete, and starter kill output. The HellFire-350 also includes one positive and three negative trigger inputs, 60-second rearm timer and current sensing with delete option.

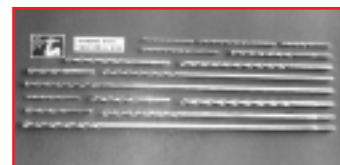
This consumer friendly security system is inexpensive and convenient to help us all "Turn Up The Heat On Crime!"

For **FREE** Information
Circle 262 on Rapid Reply

an ideal burglary resistant safe for endless applications.

For **FREE** Information
Circle 263 on Rapid Reply

Strong Arm Introduces "Longarm" Drills



Strong Arm Security has added the new "Longarm" drills to their famous line of safe drill bits. They come in 18" and 24" lengths in 3/8" and 1/2" diameter. The carbide tips have the same proven tip geometry that has made this drill line the industry standard.

For **FREE** Information
Circle 264 on Rapid Reply

New Yale Exit Device Trim



Yale Security, Inc. has added its patented, vandal resistant, free-wheeling key-in-lever rose trim to its 7100, 7200, and 2100 Series exit device lines. The trim includes the same features as Yale's popular 5400LN key-in-lever lockset.

The trim meets and exceeds ANSI torque tests for levers. When locked, the handles are free wheeling by means of independent lever return springs. This patented feature avoids spindle breakage. Through bolts offer added stability.

The following functions are

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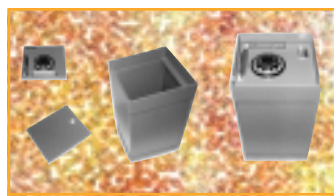


conscious, under dash, remote alarm comes with two HellFire transmitters; six-tone 125 dB siren; five function LED; valet switch and on-board parking light flash.

The HellFire-350 comes equipped with basic features such as remote door lock, panic function, "Smart Valet" alarm delete from the

U.S. Security Safe's New Floor Safes

U.S. Security Safe proudly announces their newest floor safe design in two popular sizes. A single door and



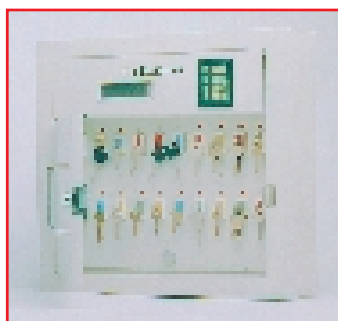
double door design that make these safes ideal for home or small business. High tensile steel body and door construction along with triple action relockers make these

S E C U R I T Y C A F É

available: 541F, key-in-lever nightlatch, with the device operated by key; 546F, key-in-lever F08, with the lever unlocked by key; 548, non-locking lever; and 549F, dummy lever trim. Lever handles are available which will accept Best, Corbin, Russwin, Falcon or Schlage cylinders.

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Circle 265 on Rapid Reply

KEYWATCHER II™ by Morse Watchman



Morse Watchmans Inc., announces the introduction of its newest KeyWatcher system. In addition to all of the KeyWatcher I features, the system now offers: Holds up to 1,800 keys, Parallel printer port, Multiple serial ports, Optional card reader, Optional swipe card, Multiple external alarm outputs, Upgradable to 1000 users, One time user-code, Allows groups of keys to be released.

Morse Watchmans Inc., an innovator in the field of guard tour equipment, has been in business for over 100 years. Located in Oxford, CT the company serves customers around the world with the latest, state of the art, automatic guard tour systems and key management systems.

For **FREE** Information
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SDC's New Emlocks



The 1580, 1570, and 1511 through 1542 Series EmLocks, the most complete line of electric locking devices for the access control industry, with a patented all steel magnetic core construction, have been introduced by Security Door Controls.

The SDC 1580 Series EmLock produces 650 lbs of holding force and is ideal for traffic control and high frequency areas. The SDC 1570 Series EmLock meets or exceeds 1200 lbs of holding force; and the SDC 1511 through 1542 Series EmLock meets or exceeds 1650 lbs. of holding force, which is powerful enough to hold many doors against a force that will deform or destroy the door before the EmLock can be forced open.

Environmentally safer and aesthetically pleasing, the EmLocks eliminate epoxy which reduces toxic fumes in the event of a fire emergency.

With nothing to wear out and no moving parts, the EmLock is virtually maintenance-free.

All EmLocks exceed ANSI/BHMA Grade 1, 2, or 3 standards, are UL listed in the United States and Canada, and are made in the USA.

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Circle 267 on Rapid Reply

Jensen Tools' New Crimp Tool Kits

Jensen Tools' Universal Crimp Tool, designed to make almost any crimp connection with a single tool frame and interchangeable dies, is now offered in kit form. A compact zipper-style nylon case with protective die-cut foam interior has been introduced to hold the tool frame and up to seven dies.



Jensen Crimp Kits come with two dies included, and are available in two models. A Telco Kit (Model #23B231) contains dies for RJ11 (4-6 position) and RJ-45 (8 position) cable. The Coax Kit (Model #23B233) contains dies for RG-58/59/62, PVC and plenum. Buyers may select from a complete assortment of other dies, including fiber optic, to complete a kit. (Additional dies must be purchased separately.) The Jensen Universal Crimp Tool carries Jensen's lifetime guarantee.

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First Try™ Slip- Resistant Gel

Everyone knows the frustration of a stripped screw head. Now there's a quick and easy way to remove problem fasteners — First Try™ slip resistant gel.

A single drop applied to a



stripped screw head or driver tip provides enough grip to back out even the most stubborn screw.

First Try™ is a non-staining, nontoxic, noncorrosive and odorless gel. It can be used with screw drivers, hex keys or any type of gripping tool for the removal of screws with stripped heads or the tightening of new screws.

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The CLAM™ From Lockmasters®, Inc.

The CLAM is one of the most unique tools available to today's locksmith industry. Designed to give an exact image of a key, the CLAM allows the user to conveniently cast a replica key.

Duplicates of rare and historic keys may be created by utilizing the CLAM. The locksmith can make duplicates when a duplicator is not available or when out of stock on the needed key blank. The duplicates can be cut at a later date or different location. Duplicates of the bit on a high security key can be cast and preserved for later duplication resulting in considerable savings for the customer and a high margin sale for the safe technician. The uses are as varied as your imagination!

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GENERAL SECURITY

Test Article #103

Door Closers – Regular Arm Installations

by Mark Gloekler

The first step in any door closer installation is to examine the door and frame. Make sure the door is hung plumb and square, with no operational problems or binding in the opening. If out-of-plumb conditions exist, or such situations as the door dragging on the floor or carpet the problems must be resolved before the installation can continue. Operational problems such as these will have a negative impact on the life and function of any closer product installed.

As part of the initial survey, note whether this is a new installation or a retrofit into an existing door and frame. Retrofit applications are called for when the existing closer is old or worn, or when it does not comply with the requirements of the Americans With Disabilities Act. Building owners often take advantage of the retrofit requirement to both update and upgrade the closer.

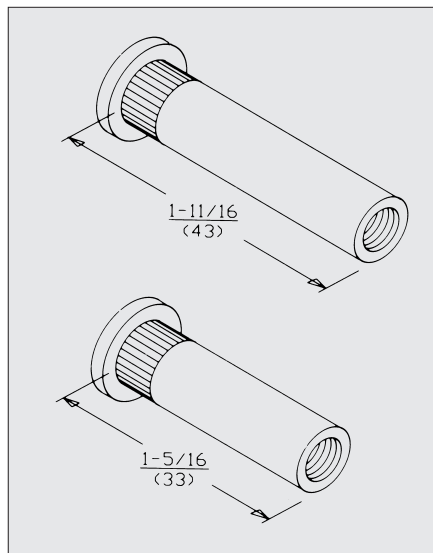
Determining whether the new closer will fit the existing holes is an important part of the initial survey in retrofits. While most manufacturers' products are different and have their own unique hole patterns, there are certain situations where products are available to retrofit into existing hole patterns. If the closer has a different hole pattern, potential problems must be resolved by redrilling or repairing existing holes to accommodate the new closer.

Consideration should also be given to how the door is hung during the initial survey. It is generally recommended that doors be hung in a friction free or minimal friction environment with ball bearing hinges or pivots. Doors hung on non-bearing hinges or pivots typically experience much greater friction and wear, resulting in less than optimal closer function and the possibility of operational problems.

Reinforcement

It is paramount that the door and

frame must be properly reinforced to accept the closer. With hollow metal doors and frames, a reinforcement



1. The typical sex bolt used for fastening door hardware, including door closers.

plate is typically welded or attached during the manufacturing process. If the doors and frames are not reinforced in this manner, the fasteners may work loose and pull out. This could in turn cause the closer components to come loose, posing a potential hazard for pedestrians.

Wood doors and frames must also have appropriate reinforcing material to assure secure attachment. Less expensive wood doors often have smaller top rails. Particle core in the center of the door is very common. The particle core does not provide a secure foundation for the closer, again posing the threat of it being pulled from or falling from the door. Where the reinforcement is inadequate, it may be desirable to use sex nuts or through bolts. (See illustration 1.)

If the installation involves aluminum doors and frames, check to be sure the material thickness is sufficient to assure secure attachment. On thinner gauge doors and frames, Rivnuts are often installed to ensure secure mounting of the closer.

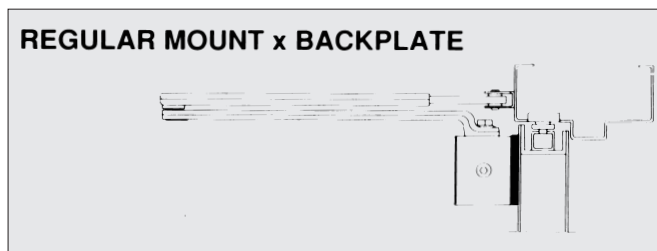
Labeled Fire Doors

If the installation involves a labeled fire door, the door must be self closing and self latching. The use of a standard hold open style arm is prohibited on these doors. In addition, most manufacturers recommend sex nuts or through bolts for the attachment of closers on labeled fire doors.

Building codes normally give precedence to the need for closing and latching fire doors over ADA related barrier-free easy-opening concerns. Where these requirements are in conflict, it is often desirable to use a low energy power operator which can provide both barrier-free access and secure closing and latching.

Stops And Holders

An important consideration with the top door rail in regular arm installations is the potential for conflict between the closer screws and a



2. Using the correct installation method and drop plates help resolve mounting conflicts.

concealed stop and holder. The concealed holder and stop is mortised down into the top door rail. A backplate is sometimes used to resolve this conflict. It is attached to the door below the depth of the mortised stop plate. (See illustration 2.) This provides the mounting

surface for the closer, which is attached to the plate with machine screws.

Positive Reveal

Double egress doors and frames, which typically have the reveal on the pull side of the door and frame, can pose a problem in regular arm installations. Most regular arm mounted closers require a flush door and frame condition on the pull side of the opening or a maximum 1/8" door inset. If this situation exists, the installer could consider using a top jamb or parallel arm installation on the opposite side of the opening. Special double egress arms are sometimes available to address this reveal problem.

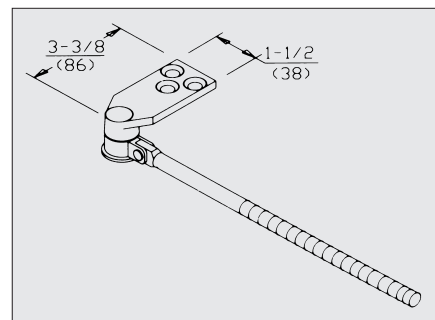
Bullnose Or Ornate Trim

Bullnose or ornate trim poses a problem in that the trim is located on the face of the frame where the closer's foot would normally attach. Installers may be tempted to improperly mount the shoe at an angle due to the unflat surface. This can cause binding and premature wear of the arm. Special mortise brackets are available from most manufacturers to

address the situation. This bracket requires mortising a notch in the rabbet of the frame, eliminating the need to fasten the foot to the face of the frame. (See illustration 3.)

Degree Of Opening

Prior to installing the closer, the degree of opening must be



3. Accommodating another special application is the mortise bracket.

determined. Most manufacturers' products have different mounting locations which determine the maximum degree of door opening. The nearer to the centerline of the door pivot or hinge the closer and arm shoe are mounted, the greater the degree of opening. The mounting

location also establishes where the range of sweep, latch, backcheck and delayed action occur.

Consider an example where the installation is a 90 degree door against an adjacent wall, but the closer is mounted for 180 degrees. The sweep, latch and backcheck do not fall into proper delayed action ranges to provide the correct function for the degree of opening.

Important: Do not attempt to install the closer to serve as the limiting dead stop for the door. This typically results in premature damage and failure. Many manufacturers offer a specialty dead stop arm option for these situations. These special arms help limit damage to the closer.

Installation

This installation, like all other successful installations, begins with a thorough reading of the manufacturers' instructions. Installation specifics vary from manufacturer to manufacturer, and the key to proper installation is in the details. After reading and understanding the instructions, remove all parts from the packaging,

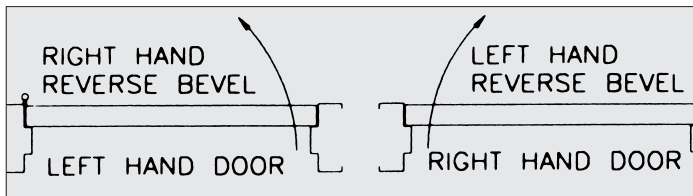


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and check to be sure they are complete and undamaged. If all is in order, proceed as follows:

1. Determine the hand of the door. (See illustration 4.) Machine the door



4. Determine the handing of the doors.

5.) Don't be creative. Closers are sophisticated products engineered for optimum operation and years of service, providing they are installed consistent with the dimensions furnished by the manufacturer.

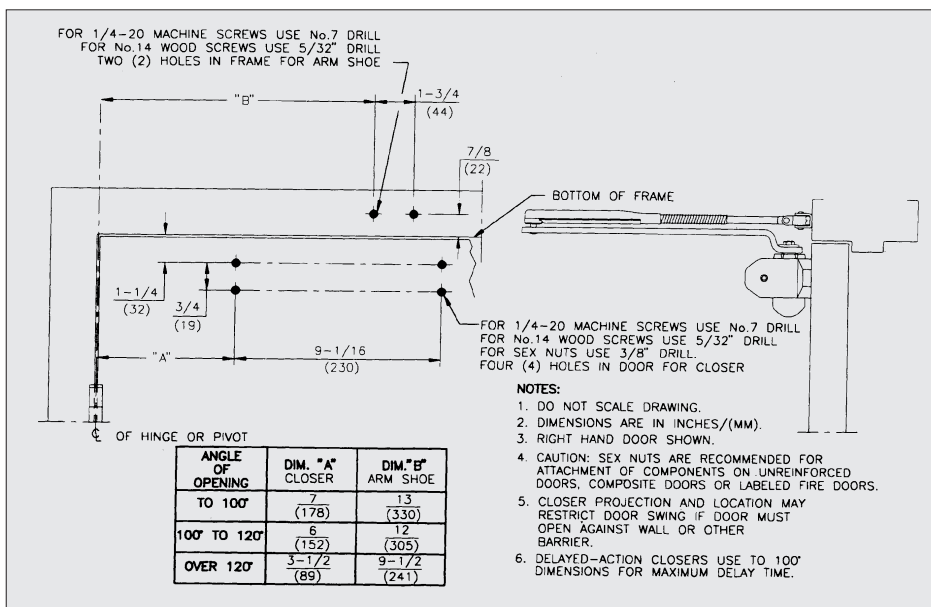
Aluminum or hollow metal doors and frames typically have to be tapped to accept machine screws.

3. Separate the main arm from the connecting arm at the elbow. (See illustration 8.)

4. Attach the main arm to the closer spindle, taking care to follow the indexing recommendations provided by the manufacturer. (See illustration 9.) Regular arm closers are normally installed with the main arm attached to the spindle perpendicular to the face of the door. Secure the arm with a washer and pinion screw.

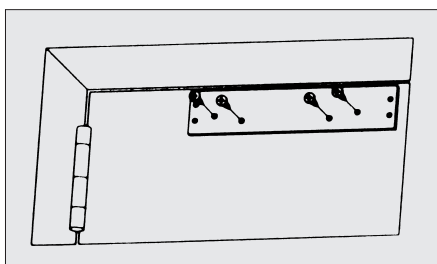
5. Mount the arm shoe or foot to the face of the frame, then attach the connecting arm on to the adjustment portion. (See illustration 10.) Some closers are furnished with an adjustable power shoe which can provide 15 percent additional closing power. (See illustration 11.) In this case, mount the shoe with the pivot point toward the hinge edge of the door. Perform the appropriate adjustments and connect the connecting arm to the main arm. Typically, the main arm is preloaded slightly so that the adjustment arm is now perpendicular to the face of the door.

6. Open the door and observe the operation of the closer. Most manufacturers preadjust the closer in the factory, but it is still necessary to fine tune the adjustment to get optimal closer operation. Adjust the sweep speed (maximum opening to approximately 20 degrees) and the latch speed (20 degrees to closing), so that closing from 90 degrees takes approximately three to six seconds. (See illustration 12.) Faster or slower closing speeds may be desirable depending upon the type and usage of



5. A typical manufacturer template and installation instructions. Follow them closely.

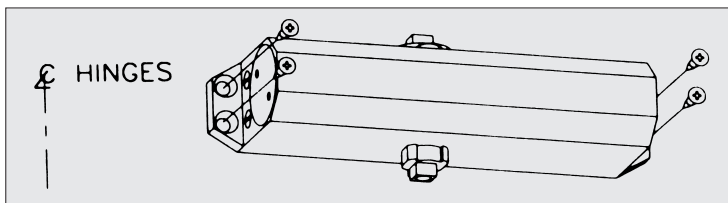
and frame to accept the closer. A machining template with appropriate dimensional details is usually part of the instruction sheet. (See illustration



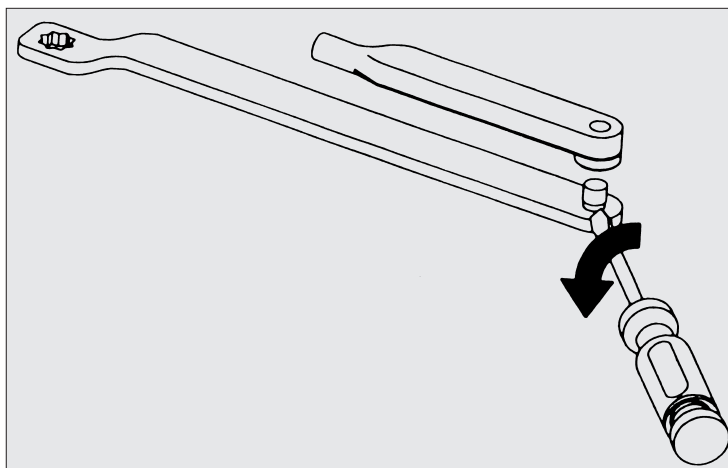
6. Attaching a drop plate.

As discussed above, sex nuts are recommended for attachment of components on unreinforced, composite or labelled fire doors.

2. If using a plate, install it. (See illustration 6.) Mount the closer to the face of the door or the plate. (See illustration 7.) Normally, sweep and latch valves should be facing towards the hinges or pivots.



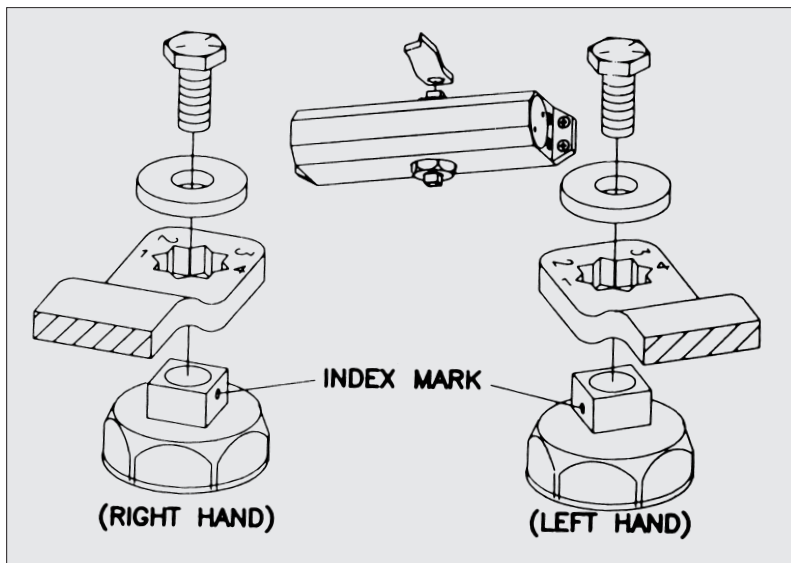
7. Mount the closer to the plate. Under most circumstances the adjustment valves are facing the hinge side of the door.



8. Separate the arm.

Continued on page 28

Continued from page 26

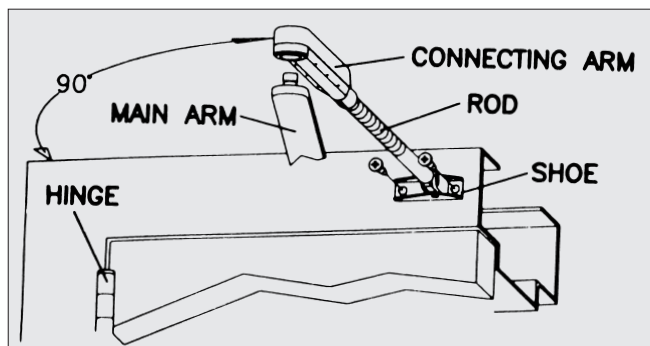


9. Attach main arm to the closer.

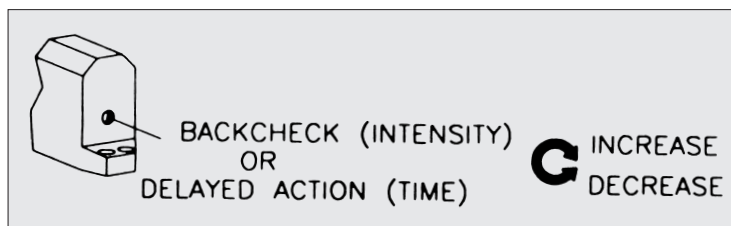
open the door to see if any modifications to the valve adjustments are required. (Some installers prefer to perform the spring adjustments prior to adjusting sweep, latch and backcheck. This is a matter of preference and will vary from installer to installer).

9. Pass through the opening, observing the door's function as it is used, and fine tune the adjustments. Observe all aspects of the door function to be sure the closer is performing reliably. It is better to spend a few extra minutes at this time than to have to make a service call to readjust later.

10. Install the dust cap, and/or if the unit was furnished with a streamline or full cover, install them. Be sure they are securely attached, as



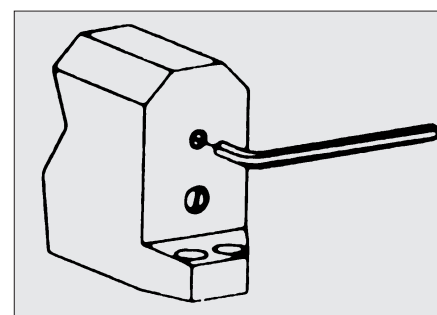
10. Mount the other part of the arm to the frame or arm shoe and connecting arm.



13. Adjust for proper backcheck.

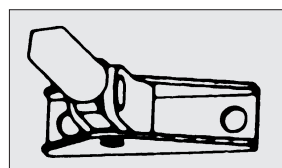
the opening. A consistent, smooth closing cycle is most desirable.

7. Adjust backcheck and delayed action if furnished. (See illustration 13.) Backcheck is the resistance provided by the closer to forceful opening. Delayed action is the delay or hesitation built into the closing cycle. Be sure that the backcheck is not set so strong that it is overly difficult to push open the door. When setting the delayed action, take into account the potential loss of heat or air conditioning that will occur if the door remains open for too long.

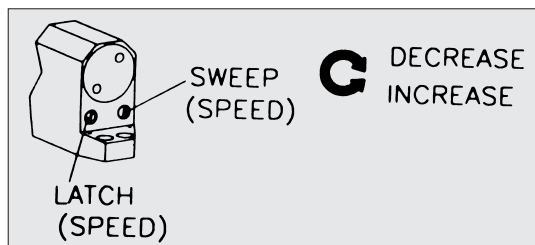


14. Adjust spring tension if provided and necessary.

a falling cover is a hazardous object. Stand back. Admire your work, knowing the customer has received a professional service and product that will provide many years of trouble-free service.



11. Some manufacturers provide adjustable shoes that can provide additional closing power.



12. Make the necessary sweep and latch speed adjustments.

8. Adjust the spring tension if required. (See illustration 14.) As discussed in the initial article in this series, sizing is a function of the type of mount, the door width and whether the installation is on an interior or exterior door. Always reference the specific recommendation of the manufacturer when adjusting spring tension. After the spring adjustment is completed, again

The author is Sales Support Manager for the DORMA Group. If you have questions regarding door closers, contact an authorized DORMA distributor.





AUTOMOTIVE SECURITY

Test Article #104

The 15 Minute Alpha Tech

by Michael Hyde



1. The 1992 Pontiac Grand Am.

This month I continue my efforts to inform locksmiths of the easiest way to make keys to different types of cars. In this article we take a look at the famous GM Alpha-Tech Ignition. It is possible to make a key to this type of ignition in 15 minutes. It requires no drilling, no picking, and no disassembly. It is easy and very effective, I have used this method many times and have never been left high and dry.

The car we used for this article is a 1992 Pontiac Grand Am. The

primarykey is a Silca GM29 or Ilco B68. The doors, trunk and glove box use a Silca GM6-OR or Ilco B45. (See photograph 1.)

Making a key to this type of ignition has been very difficult to originate mostly because of the design. The ignition is a six wafer tumbler design, with a sidebar. The lock is somewhat difficult to disassemble in a reasonable amount of time. The lock is also a one piece unit that attaches to the steering column with shear-head bolts. (See photograph 2.)



2. The Alpha Tech ignition

Making a key to this ignition is a two-part process. The first process involves using an EEZ-Reader, sold by H.E. Mitchell Co. It is important to read the instructions that come with this tool. The reader also comes with a mirror for reading the cuts on the opposite side of the column. (See photograph 3.)

The reader works by trapping a wafer in a groove in the tip of the key-tool. To allow the key-tool to slide in and out of the lock you must use the slide to lift the wafer out of the groove. The slide also reads the tumblers depth by lining up in a certain position with the depth marks on the key-tool, to define the depth. (See photograph 4.)

The problem with decoding the cylinder is that depths #2 and #3 are so close together, that they don't decode well. As you decode the ignition it is difficult to determine if you really are getting a real number 2 depth or a number 3 depth. (See photograph 5.)

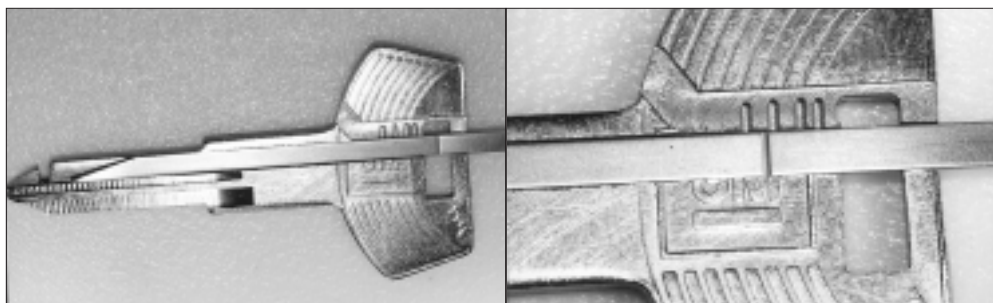
Use the reader to determine depths 1, 4 and 5. Replace the depths that you think could be a #2 or a #3 with an "X". In our example, we decode the ignition and get the following cuts: 4 4 X 4 X 1. (See photograph 6.)

Now look up that code in the "Alpha 2/3 Progression Chart," sold by Blackhawk Products, for the possible cuts. This method is extremely effective as the progression charts are made from the actual code-series and not from just a mathematical computation. Remember you are changing the 2 and 3 depths to an "X" because as you decode the ignition it is difficult to determine if you really are getting a real number 2 depth or a number 3 depth, so as to take the guess work out, you replace that 2/3 depth with an "X." As we go down the row of numbers we find 44X4X1 translates into 442431 or 443421. (See photograph 7.)

The first set of bitting didn't work, but the second bitting group did.

The actual time it took to produce this key was 12 minutes. My assistant for the day, Elliot Tamony, did not know the bitting of this ignition and had to work with the equipment provided. (See photograph 8.)

All equipment used was purchased at normal selling prices. H.E. Mitchell Co. can be contacted at (800) 626-5625. Blackhawk Products can be contacted at (970) 882-7191.



4. The slide on this tool is used to read and to raise the trapped tumblers.



3. An EEZ Reader by H.E. Mitchell is used to read this lock.

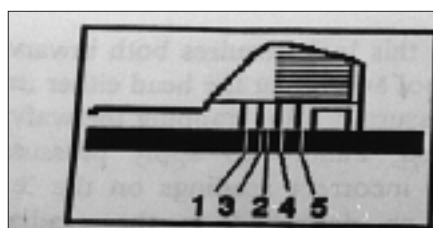


fig 2
Reading Deep

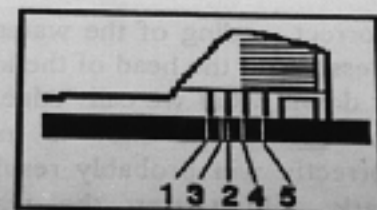


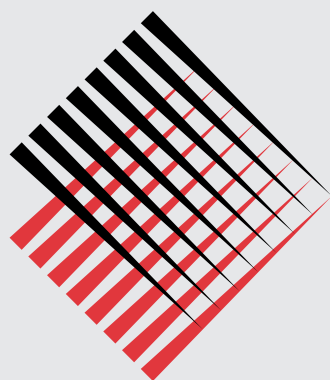
fig 3
Reading Shallow

5. The 2 and 3 depths are so close they pose a problem. Read the instructions well!

For more and information on the Alpha Tech ignition and Alpha Tech

tools see "The 1992 Cavalier," in our October 1992 issue, on page 22; and

"Five Minute Cavalier Ignition, in the September 1993 issue, on page 23.



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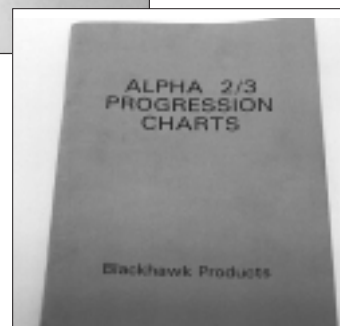


6. Reading the tumblers.

44XX44	442244		
	443344		
44XX45	442345	443245	
44XX5X	443353		
44XX54	442354		
44XX55	443355		
44X4X1	442431	443421	
44X4XX	442422	442433	443432
	443423		
44X4X4	442424		
44X4X5	442435		
44X44X	442442		
	443443		
44X445	443445		
44X45X	442453		
44X454	443454		
44X455	442455		
44X5X1	443531		
44X5XX	443533		
44X5X5	443535		



7. Using Blackhawk's progression chart, we can produce a key quickly. Even when all cuts appear as 2/3's, no more than six blanks are needed to produce a working key.



8. Assistant, Elliot Tamony, made this key in just 12 minutes.

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ELECTRONIC SECURITY

Test Article #105

Planning The Wireless Installation

by Joseph Moses, Ph.D.

This article describes basic planning of a wireless installation to make the process efficient — particularly for new installers. The planning checklist below is an overview of the steps to a successful installation:

- Determine the purpose of the system.
- Plan the use of hardwire components.
- Plan the use of wireless components.
- Determine component locations.
- Plan to explain the system to the user.

Determine The Purpose Of The System

The security system used in this example can be used as a fire warning system, an intrusion alarm system, and emergency notification system, or any combination of the three.

The Basic System

- A control panel (controls the system)
- A line carrier power transformer (uses household current to power the panel and wireless interior sirens.)

Household Fire Warning System

- A basic system, described above, plus smoke sensors and heat sensors

Household Burglar Alarm System

A basic system, plus door/window sensors, motion sensors, sound sensors, shock/glass-break sensors.

Home Health Care Signaling Equipment

A basic system, plus water-resistant panic pendant.

Plan The Use Of Hardwire Components

Even when installing a wireless system, conditions may require that some components be hardwired to the control panel. Because the current

(amperage) output from the control panel is limited, it is important that the current needed by the components not exceed the maximum current output of the panel.

For instance, if the maximum output current of the panel is 290mA, the panel may be damaged if the total combined current consumption of all connected sirens, hardwire sensors (smoke, sound, or PIR), and Interrogator (2-way voice) Module exceeds 290mA. To determine the total combined current consumption, complete a hardwire device current draw worksheet. This worksheet allows you to see at a glance, the total number of components you may need and the total current required by those components.

To find the total, simply add up the current requirement of each component you are going to use. If it exceeds the panel's maximum, either one or more devices cannot be used, alternate components may need to be used, or a separate power supply may have to be integrated into the system. (See table 1.)

Hardwire Sirens And Piezos

Sirens produce alarm sounds; piezos produce status sounds (to indicate the status of the system) in areas of the premise where the panel speaker cannot be heard. In the planning phase of the installation, test the range of the panel speaker to determine

the location of remote sirens and piezos.

The Use Of Zones

When setting up an alarm system, many of the sensors will have similar functions. For instance, all the door sensors served to protect the perimeter of the home, all the PIR's may serve to protect the interior of the home, all the smoke sensors serve to detect the possibility of fire, etc.

Because an alarm panel cannot have a separate connector for each sensor or component, the sensors or components of similar function are grouped together and called a "zone."

Part No.	Description	Qty.	mA	Total
Hardwire Sensors				
13-068	Magnetic Contact 3/8" press fit		N/A	
13-070	Magnetic Contact - sur- face mount		N/A	
13-077	ESL 445AT Smoke Detec- tor		100 mA	
79-004	Fire Pull Station		N/A	
13-082	PIR Motion Detector		10 mA	
Hardwire Sirens				
60-483	Slim Line Hardwire Inter- rior Siren & Piezo		30 mA	
60-278	Hardwire Interior Siren and Piezo		75 mA	
30-006	Piezo Status Beeper		5 mA	
13-046	Hardwire Exterior Siren		100 mA	
Miscellaneous Components				
60-391	Power Supervision Mod- ule		1 mA	
60-470	Interrogator Module †		290 mA	
Total Power Consumption cannot exceed				290 mA

1. As control panels have maximum current output, it is imperative that the components being hardwired to the panel do not exceed that maximum. To determine what the actual current draw will be, add up the current requirements of each component.

In this case, the maximum output from the panel is 290 mA. Therefore, all the devices that we use in the system cannot draw more than that.

In the case of the Interrogator Module, there is still up to 290 mA of current available for hardwire sirens provided they are all wired through the module. This is because the sirens are turned off when the module is on.

This zone serves as an area of protection, and includes all the sensors or components that are tied to it.

For instance, perimeter sensors (typically doors) may be on one zone, interior sensors (PIR's, mats, electric eyes, etc.) may be on another zone. And fire, yet, on another zone. Typically, the more zones an alarm panel offers, the more versatile it can be by offering areas of common function to be tied to a separate zone.

For example, instead of putting all the doors onto one zone, they can be divided up by the type of function they serve. One door may serve as the main exit/entry door when activating and deactivating the alarm. This door function requires both exit and entrance delays to allow the occupant to arm and disarm the system. This door sensor may be tied to its own zone allowing the delay.

Other doors in the system that do not need the exit/entrance delay, can be tied together on their own zone. These doors are armed immediately upon exiting, and activate the alarm immediately upon the door being opened or violated.

Offering more zones can also offer more options on interior protection by offering the user to arm and disarm the various interior sensors when they are home. For instance, when sleeping, the PIR covering the basement and first floor may be active while the PIR covering the bedroom hall or upstairs is turn off. This allows the family free movement in the area they are utilizing while continuing to protect the rest of the premise.

In commercial applications, by setting up and utilizing zones, areas of an office or building that are inhabited or being used can be disarmed while the unoccupied areas remain protected.

Again, the more zones a panel offers, the more versatile that system can be. As the price of a system is affected by the number of zones and functions offered, make sure that the system you plan on using can effectively cover the protection requirements of the customer.

Plan Use Of Wireless Components

On a wireless system, depending on whether you have an 8- or 17-zone panel, you can install up to 8 or 17

Group or Zone No.	Name	Application	Alarm	Delay	Restoral	Supervisory	Central Station Report	Chime	Arming Levels
00	Fixed Panic	24-hour audible fixed emergency buttons	Police	Instant		✓	✓		1,2,3
01	Portable Panic	24-hr. audible portable emergency buttons	Police	Instant			✓		1,2,3
26	Fire	24-hr. fire, rate-of-rise heat, and smoke sensors§	Fire	Instant	✓	✓	✓		1,2,3
27	Custom	Door/window sensor	Silent	Instant	✓	✓			1,2,3

2. When surveying a customer's home, take inventory as to the types of protection needed and assign a group or zone number.

wireless sensors. As you plan, keep track of the type and number of wireless sensors required for the installation. During the installation process, you will program each sensor into a group or zone. Programming is a process of setting the control panel to the programming function. You continue programming by entering code numbers that provide the panel with the information it needs to operate the system the way you want it to.

A sensor's group or zone number identifies the sensor's purpose, such as intrusion detection, emergency panic button, motion detection, or fire or smoke detection. When the alarm has been activated, this number is sent to central station. By this number, the central station operator

No.	Group	Type and Location
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		Hardwire input

3. Assign each sensor on the premise a zone or group number. Remember that the control panel will determine exactly how many zones are available.

can identify the purpose of each sensor and dispatch the proper authorities (police, fire department, or medical personnel).

When inspecting a customer's home, select the group assignment for each sensor as part of the planning process. (See table 2.) Keep track of the group/zone numbers you have assigned using a table. (See table 3.)

When planning where to locate a wireless transmitter, first test to see that the transmitter is within range of the receiver. If the transmitter is out of range, a repeater can be placed between the transmitter and the receiver.

Plan Wireless Interior Siren (WIS) And Lamp Module

If you are using a Wireless Interior Siren (WIS) or the lamp module (ITI X-10), you must use the Line Carrier Power (LCP) Transformer to power the system. The LCP Transformer allows the WIS and the X-10 module to receive signals from the control panel via household wiring. The WIS produces low-volume status sounds and high-volume alarm sounds. It does not produce voice messages. X-10 lamp modules turn on lamps during police, auxiliary/medical, and fire alarms and during entry/exit delays. The number of X-10 modules used depends on the needs or desires of your customer. The number of X-10s is limited by the number of available outlets on the premises. The same is true of Wireless Interior Sirens. (See photograph 4.)

Continued on page 36

Continued from page 34
Determine Component Location

Draw a floor plan to plan for the location of the panel, system devices, and sensors. Follow these guidelines for locating components:

- Provide the control panel with access to the incoming phone line, 110 VAC power, and other wired devices.
- Be able to run the necessary wires between the panel location you select and the locations of the hardwired components and connections.
- Mount the panel in a temperature- and humidity-controlled environment.
- To the extent possible, find a panel location that is central to all sensors.
- Mount sensors within 100' of the panel whenever possible. Although the ITI system has an open field range of at least 500', use 100' as a starting point inside a building.
- Refer to detailed mounting instructions that come with each sensor.

Plan To Explain The System To The User

Some of the best techniques for explaining the system include using a demonstration kit and leaving a video user manual. It's also effective to have the customer practice operating the system and to walk through the owner's manual while you're there. Using the demo kit gives you a chance to show customers exactly how the system works. The user presses the buttons to give the system an access code and a variety of commands. Sirens demonstrate the effectiveness of the system to scare off an intruder. A handheld panic button or pendant lets users know what it feels like to be able to activate the system with a



4. With the addition of a line carrier power transformer (LCP), both siren and lamp control can be obtained through a premise's existing wiring. The LCP allows the WIS (ITI WIS pictured above) and lamp module to communicate with the control panel via the existing wiring.

simple press of a button. With a demo kit you're selling and teaching at the same time.

Using a video owner's manual works well, too, but you can't be sure the user will watch the whole thing or understand all of the information. Watching the video with the user gives you a chance to expand on the video's instructions and answer questions. If you can't watch the video owner's manual with the customer, stress the importance of watching it to the customer.

Instructing the user on the operation of the system is important for two main reasons: 1) it's good customer relations to care enough to explain the proper use of the system; 2) the more your customer knows, the fewer false alarms they'll have, and the fewer panic calls you'll receive on simple matters like how to turn off a low-battery message.

Plan to cover the following topics in your customer training—

- How to prevent false alarms
- How to cancel an alarm
- What siren/piezo sounds the system makes and what they mean
- When to call for system service
- How to command the system using a phone on and off premises (with applicable systems)
- How to test the system

The author is Senior Editor at Interactive Technologies, Inc. (ITI), of North St. Paul, MN. For more information contact ITI at (800) 777-5484, fax (612) 779-4879.

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BEGINNER'S CORNER

Make Garage Door Keys



by
**Eugene
Gentry**

A call came from a man that wanted keys made for two garage doors, one for his place and one for another garage door at a house that he had sold.

This call was important, because 75 percent of my business is from either repeat customers or referrals. This one man, now in real estate sales, has called dozens of times for openings, new keys, rekeying and lockset and deadlock installation.

The first thing I had to know about the garage doors was the type of key blank to use. The man did not know any of the brand names. Referring to a list showing possible garage door key blanks, I found listed a Y11, L1, Y1, Y1C, and T4. The blanks were checked to make sure I had all of them.

I had planned to impression the locks, but am a little insecure on the impressing. Some times it goes fast, other times it does not work at all. So, to cover may tail, I purchased two "T" shaped, universal garage door handles with keys. If I couldn't impression, I could replace the handles with new ones. (See photograph 1.)

At the first job site, the garage door handle was "T" shaped and looked similar to the universal handle. So, I decided that the fastest and easiest way to do this was replace the handle. The old handle was removed by taking out two bolts at the rear, but it had a different mounting set up then the new one.

There was only one course now, to impression. With no identification on the lock, I tried the blanks. The blank that fit was the Y11. The blank was sharpened to a knife edge, and the marks showed up very good. The impressing went well, and it wasn't long before a key was made.


There was another way a new key could have been made - by reading the wafers. This works well for me. If you

are a good wafer reader, you can tell what the cut is for each wafer in the lock. The makes key generation very fast and easy.

If you are new at reading, at least you can tell which are the high and low cuts are, then, along with impressing, you can file a key pretty fast. Reading the wafers involves looking into the plug with a magnifier and light. Then using a pin or straight picking tool, depress the all the wafers in the lock. Then slowly draw the tool out of the lock, closely watching whether the wafers pop into high or low positions. Make sure and use a groove in the lock to compare

how high each wafer is sitting. From this you can tell whether to make your key cuts shallow or deep. (See photograph 2.)

At the second site, the garage door handle was "L" shaped, with a large mount, so the universal handle did not fit.

This lock also could not be identified with a brand name, but the Y11 blank fit the lock. As before, the blank was filed to a knife edge, and impressing began. The marks showed up well, and a new key was made in short order. 



1. Two common garage door handles are the "T" and "L" handle. They are available from most locksmith distributors.



2. Using an otoscope with pin attachment, each wafer tumbler in the lock can be read.

G. SELECTOR SWITCH DESCRIPTION	POSITION #1	OFF	NORMAL	ON
SYSTEM STATUS				
AUDIBLE STATUS	POSITION #2	NONE		SET-UP
BYPASS MODE #4				ON DURING BYPASS
BUZZER MODE #5	POSITION #3		1 SECOND	3 SEC.

**COVER
STORY!**

ELECTRONICS:

Through the years, many locksmith stores have supplemented their income by offering related goods and services to their customers. Sometimes, they even offer non-related goods and services.

In one Texas town, a locksmith store sported a window decorated with micro-bikini swim wear. "The wife's business," was the explanation. Everyone agreed it was a real eye-catcher. However, no one knew for sure how many customers were drawn in by the display or how many were chased away.

More common sideline businesses have been bicycle repair, luggage repair, sign making, metal engraving, even knife and scissor sharpening. When asked the reason for offering these added services, locksmiths have most often replied, "To increase our income," or "As a customer service."

Recently, in the face of increased thievery and vandalism from both external and internal sources, a different approach is gaining strength in our industry. Security has become far more than standard locks and keys, and sideline businesses have become more than mere gimmicks designed to draw customers into the store. In homes, businesses, and institutions across the land, we're seeing a tightening of security measures; pushbutton and card-access entry locks, electronic surveillance equipment, and custom designed alarm systems are coming more and more into use. How is this impacting locksmith businesses?

Adding supplementary income while staying in the same field can be done with a little planning and education. Sara speaks with three companies who've made it happen.

Wanting to know more about these changes facing our industry, I spoke with key people in three very different businesses. These businesses have one very important element in common: they've been blending locksmithing and electronic systems successfully, for years.

Action Lock & Key of Roselle, Illinois, is owned and operated by Andy Maglio. He has a work force of ten, including himself, seven technicians and two office employees. Operating from a 2400 square foot store, they keep five service vehicles on the road, serving customers within a 20 mile radius. *(See photograph 1.)*

Andy has been in the security business since 1972. In 1980, he opened his own locksmith business. Two years ago, he added electronic card-access systems, although traditional locksmithing remains his main business.

Card-access systems are enjoying growing popularity with hotels, hospitals, and the like. However, Andy has found his niche installing them in warehouses and internal areas, for example, in smoking rooms, executive washrooms

1. Andy Maglio (left), owner, and Vince Maglio, Technical Supervisor of Action Lock & Key, Roselle, Illinois, have expanded business by adding electronic security to the already booming lock business.





NEW "SIDELINE" FOR LOCKSMITHS?

by
Sara Probasco

or lunchrooms, "anywhere they don't want just anyone coming in the doors, but they want (certain) employees able to come in and out," he says. These systems presently constitute five to seven percent of Maglio's total business.

"Licensing is only a problem if you let it be," Maglio told me when I asked the legal requirements for installing electronic systems in Illinois. He suggests locksmiths find out the law and restrictions in their own area and then comply. "People that don't really care may be doing it anyhow," he adds, "but you don't need those kinds of headaches!" He went on to say that the idea is to find out what your customer needs and see what you can offer, without getting in over your head.

He told of one recent job where, after receiving a customer's call, he went out only to discover they wanted card-access tied into their existing alarm system. He wasn't licensed to do that.

"Don't be afraid to refer something," he added. "If there's a job you can't handle, send it to an expert in that field. It'll come back to you."

Chris and Ron Curry of RSM in the Chicago area, began their business differently. In the '70s Ron worked with installations, doorframe work, and the like, as part of his regular job. Then, in 1977, he and Chris decided to go on their own as subcontractors in the alarm business. They didn't add locksmithing until 1986. Now they also include closed-circuit TV surveillance, but no monitoring. They contract out that service to others.

Presently, their shop is in the small to medium range in reach and size, although they cover about a 100 mile service radius, serving many clients who have multiple locations. Their alarm sales come entirely from referrals and telephone leads. Although at first their business was about half and half commercial and residential customers, it is now clearly more commercial.

The Currys have chosen to form two separate corporations for their related businesses. One reason was that alarm liability insurance rates are "astronomically high," when compared to locksmith rates. They find the two businesses work well together, allowing them to pass



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2. From the other side of the spectrum, Ron Curry and his wife Chris have added locksmithing services to their already established alarm and CCTV business.

customers back and forth. "It keeps us from sending clients to others," Chris pointed out.

As in many states, working with electronics and alarm systems in Illinois requires obtaining a private (or agency) alarm contractor's license. No electrical license is required to obtain an alarm license. However, a person who holds a state contractor's license for electrical work can install alarm systems while local municipalities check them out for the alarm license. This more enviable electrical license is extremely difficult to obtain, requiring a tough test that necessitates several weeks intensive study to pass. The Currys hold both licenses. They also continuously upgrade their knowledge of the industry by attending classes and seminars whenever possible.

Mulhaupt's, Inc., is a giant, compared to most businesses in the retail locksmith and security industry. Located in Lafayette, Indiana, the business originated over 100 years ago, in the mid-1880s. It is presently owned and operated by fifth-generation members of the same family. What's more, the original site is still part of the larger present structure.

Originally, Mulhaupt's was a bicycle and hardware store, according to Sales Manager, Tom Hausladen. It has since grown to include bicycle repairs, contractors' hardware, locksmithing, metal door and frame manufacturing and sales, Dictograph alarm sales and installation, and 24-hour on-premises alarm monitoring service (including security, fire, and CCTV).

They employ 53 workers, in all, and run 11 service vehicles. Five of their employees work exclusively on writing bid specifications for contract hardware. Six others monitor their client's security systems.

Seventy percent of their business comes from referrals, 15 percent from direct advertising, such as the yellow pages, and 15 percent from walk-in customers. They find locksmithing provides a great referral basis for electronics. When a customer increases his locking capacity, he's usually looking for more security—their cue to suggest an electronic security system.

When asked what advice he might give locksmiths who were contemplating adding electronic security systems to their goods and services, Hausladen pointed out that sales techniques were different, between locks and security systems.

With locks, the customer recognizes his need before he comes into your store. He's simply trying to fill that need.

With security, you have to sell him on the idea, explain why he needs it, design a system for his particular situation. "He may need a motion detector, a glass-break detector, window contacts, fire protection, maybe temperature detection, water leakage, and so forth," Hausladen added. "Alarms are not just 'burglar alarms,' any more; they're for security and fire protection, and much, much more."

Increased inventory doesn't seem to be a problem, if adding alarm sales to your business. Of course contact switches, wires, and small parts would need to be kept on hand, but delivery of the equipment is apparently prompt from alarm system distribution points, guaranteeing overnight delivery, in most instances, whereas locks and hardware often take five to six weeks or more.

Andy Maglio agreed that inventory costs shouldn't be a problem, but he viewed the matter from a different angle. He recommends not to overstock shelves with electronics inventory due to the fact it may be outdated before you can sell it. He also warns to choose a busy supplier. You want to be sure your supplier turns his inventory quickly, so he won't ship outdated goods to you when you order. "You got to watch them," he said.

The Curry's, Andy Maglio, and Tom Hausladen all agree that sales are best made through referrals and telephone leads, not cold calls.

Among the negative aspects of adding electronics, all three listed time as the major deterrent.

"Think about how you will eat, breathe, and sleep alarm systems. Unlike lock accounts, alarms are buzzing and active twenty-four hours a day," Chris Curry said. "Such a

commitment! But you must provide service. If not, there's no product value to the customer."

Hausladen said, "You get a locksmith call, you know you have a sale. With security, they want to think about it, days, weeks, sometimes months.... You can't assume the customer will buy, just because they call you, but you can't afford to short-cut the presentation. You give them the whole pitch.... You spend four or five hours work for a sale that may not materialize. You make a presentation, convince them of the need, convince them better than your competitor.... You're selling yourself and your system design." As Dictograph's second leading salesman, Hausladen should know.

So, what are the pluses?

"Financial benefits. The recurring revenue base can be very helpful during lean times," Curry said.

"The big ticket," Maglio said. "What does a push-button entry cost you? Three, four hundred bucks? For a couple hundred more you can put in an electric strike...takes three hours...(you get) sixteen, seventeen hundred dollars." He also stated he cops high-dollar for his follow-up service.

"A low-end security system may run a hundred ninety-nine dollars to two ninety-nine. A normal system—not top, but normal—is fifteen hundred to twenty-five hundred dollars," Hausladen said. "The customer must know what constitutes the differences.... The customer wants to shop around, but not necessarily for prices. That's not as big as one might think," he added. "What they're buying is a whole design program, a custom design.... (it may include) home automation—activating appliances, temperature, lighting when they are away from the house. This can save them

money in addition to making the house look more lived in while they're away."

Security systems are a bit like locks, Hausladen reminded me. "You can lock your door with a chain for a dollar ninety-nine. If that gives you a sense of security and you're happy with that, that's fine. Most people aren't. They want to know their home is properly secured. It may be all right on your storage shed, but it's not protecting your family.

"(By the same token), a two hundred dollar alarm system may be all right on your storage shed, but it's not going to protect your life and your property."

As Hausladen further pointed out, those who choose to enter the electronics security field must be sure their customers know that there's more than just a difference in price between these systems. There's a difference in quality, in installation, in service—a whole lot of factors.

Remember, it's not just a more expensive system you'll be promoting, it's a whole design program for your customers' security.

Note: Anyone really serious about getting into alarms who feels the need for formal education in that field may want to consider contacting Moraine Valley Community College at 10900 S. 88th Avenue, Palos Hills, Illinois, 60465. They held a series of intensive classes, beginning last September 12.

The course ran 22 weeks, meeting every Tuesday and Thursday from 6 p.m. until 10 p.m. The price: \$1195. I understand they offer this course repeatedly.

No doubt, similar courses are being offered in other parts of the country. Perhaps they can tell you where. **TL**

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**COVER
STORY!**

by Michael A. Webb

FOUR STEPS TO STRIKE SELECTION

Choosing the right strike for the application is as easy as 1, 2, 3... and 4.

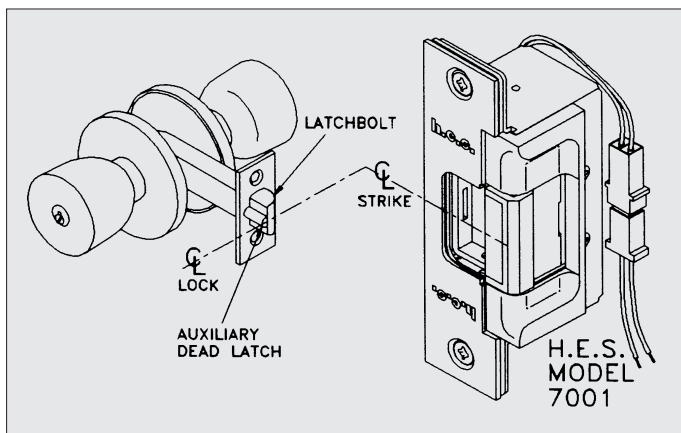
Many locksmiths become intimidated with the thought of having to choose an electric strike to fit their existing door hardware. It's easy to understand this frustration when you look at all of the different kinds of locks that can be found on the market. Locks with latchbolts, locks with deadbolts, locks with anti-pick or dead latching mechanisms, "cylindrical" locks, "mortise" locks, "combo" locks, the list can go on and on. This task becomes even more complicated when you look at all of the different types of electric strikes being produced. This seemingly overwhelming job is actually quite simple once you understand a few basic points about the door hardware and basic relationship between the lock and the electric strike.

When you are dealing with existing door hardware, you want to choose an electric strike that performs the same function as the existing strike plate in the door jamb. After all, an electric strike without electricity is nothing more than an expensive strike plate. To properly match the two together, you only need to know four basic principles:

1) The relationship between the centerlines of the lock and the electric strike. 2) The size and positioning of the electric strike cavity. 3) The type and length of the bolt on the lock. 4) The relationship between the auxiliary dead

latch (when applicable) and the electric strike. If this seems confusing, it's not. So don't give up just yet.

The term "centerline" refers to the vertical center of the lock or electric strike. There are many configurations of locks, therefore, the bolt on the lock may or may not be positioned at the centerline. The lock shown in illustration one is called a cylindrical lock, to denote the cylindrical hole which is cut into the door for installation. This lock is designed with a latchbolt and an auxiliary deadlatch positioned at the centerline. Latchbolts of this kind are commonly found in three lengths, 1/2", 5/8" and 3/4".



1. Centerline alignment for a typical cylindrical knobset.

When you select an electric strike for this type of lock, you want to note the four points mentioned above. The electric strike cavity should be positioned at the centerline.

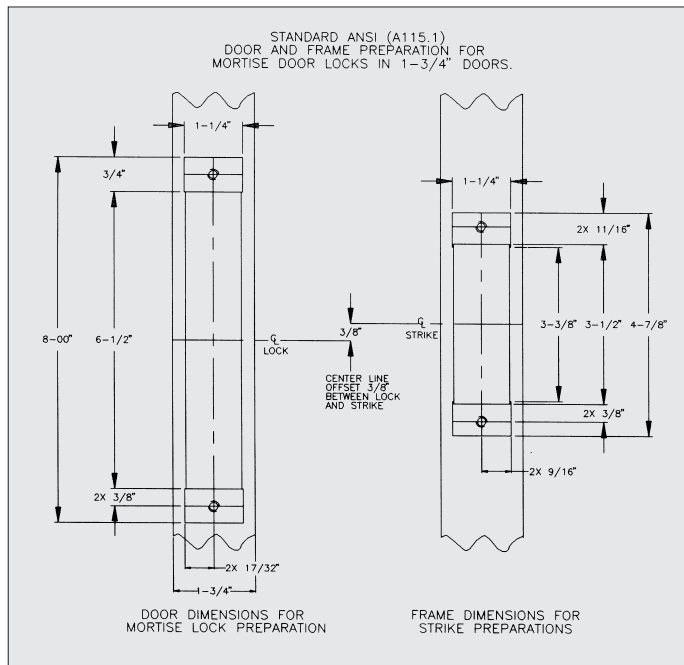
The unit needs to have the proper cavity depth to accept the latchbolt length. The keeper on the electric strike needs to be spring loaded to swing closed after releasing the lock. Also, the keeper needs to be designed to depress the auxiliary deadlatch when the latchbolt enters the strike cavity.

The mortise lock, sometimes referred to as an "offset" mortise lock, is given this name to denote the type of pocket cut into the door for installation. The term "offset" refers to

the centerline positioning of the lock in reference to the ANSI strike plate on the door jamb. The centerline of the lock is positioned $\frac{3}{8}$ " below the centerline of the electric strike. The American National Standards Institute (ANSI) describes these standards as follows:

ANSI/DHIA115.1 2.1.2 Mortise lock. Mortise Lock is used herein to designate locks having rectangular box-shaped bodies, which are mounted in the edge of the door by mortising.

ANSI/DHI A115.1 4.1 Location of Lock Strikes. The location of the centerline of the strike in the frame shall be $40\text{-}5/16$ " from the bottom of the frame. ANSI/DHI A1 15.1 4.2 Location of Lock. The centerline of the lock in the door shall be located in reference to the centerline of the strike,



2. The offset mortise lock derives its name from the offset nature of the strike in relation to the centerline of the lock. By ANSI standards the centerline of the lock is to be approximately $\frac{3}{8}$ " below the centerline of the strike.

approximately $\frac{3}{8}$ " below the centerline of the strike. (See illustration 2.)

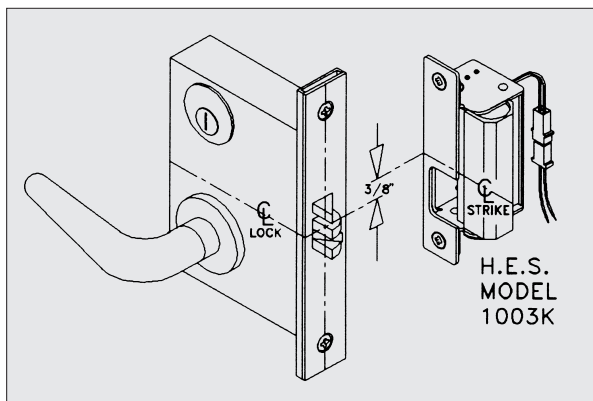
Mortise locks are designed in many different configurations. Each lock manufacturer has designed their mortise lock with the latchbolt, deadbolt and auxiliary deadlatch in slightly different positions and arrangements. When taking all of this into account, installing an electric strike to accommodate a preexisting mortise lock may seem complicated. However, if you apply the same four principals to this kind of lock, this also proves to be a simple task.

When you select an electric strike for these locks, you need to pay close attention to the relationship between the centerlines of the lock and the electric strike. You also need to note the relationship between the latchbolt and deadlatch on the lock and the cavity in the electric strike. The keeper on the electric strike should be spring loaded to swing closed after the latchbolt is released.



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3. Having the latch and deadlatch centrally positioned represents a majority of the locks.

The mortise lock in illustration three has the latchbolt and deadlatch positioned relatively close to the middle of the lock. This design represents the majority of locks being produced by the different manufacturers.

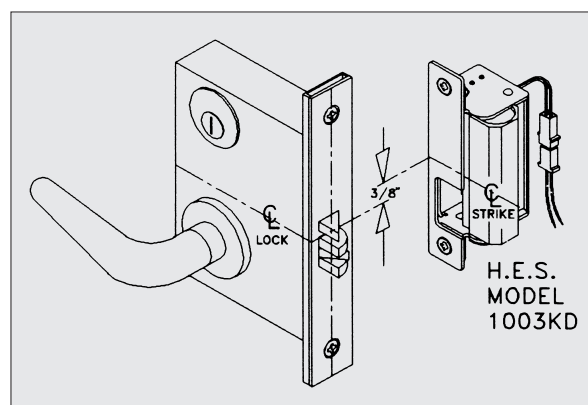
The mortise lock in illustration four is similar to illustration four, but the latchbolt is positioned significantly lower on the lock. (Manufacturers of this lock arrangement are Sargent, Schlage and Yale.) When you select an electric strike for this kind of lock, you want to choose a unit with an extra low strike cavity.

The mortise lock in illustration five has a latchbolt and a deadlatch, but the deadlatch is positioned below the latchbolt. (Falcon is the manufacturer of this lock arrangement.) When you select an electric strike for this

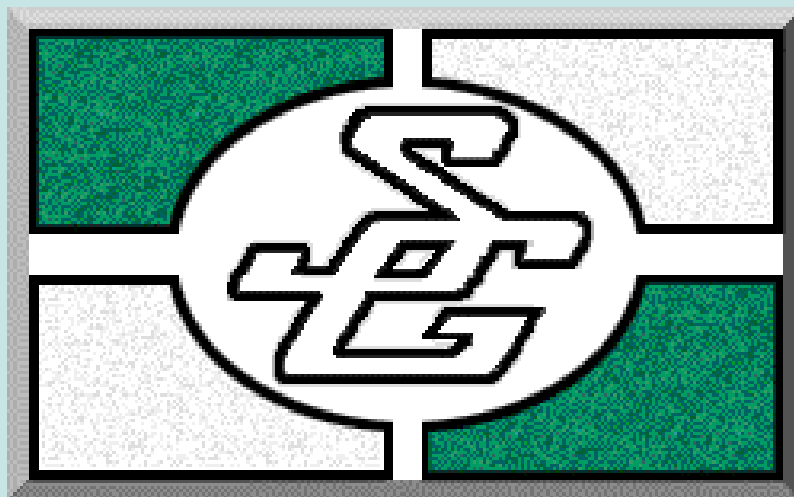
lock, the strike cavity should be slightly higher on the unit, with enough material on the face plate to depress the deadlatch.

The mortise lock in illustration six shows a mortise lock with a latchbolt, auxiliary deadlatch and a 1" deadbolt. This lock can also be found with the three components in a variety of arrangements. To select an electric strike for this type of lock, you must be sure that the strike cavity is large enough to fit both bolts and is designed to accommodate the length of a 1" throw deadbolt.

Additionally, the electric strike should accommodate a deadbolt in a variety of ways. The keeper in the electric strike may require spring loading to swing



4. Typical of Sargent, Schlage and Yale, the latch and deadlatch are positioned much lower on the lock.

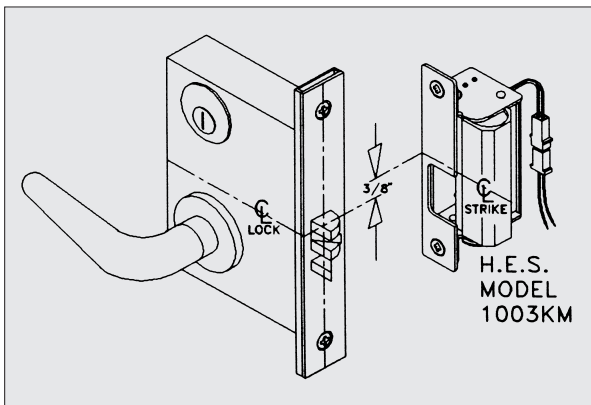


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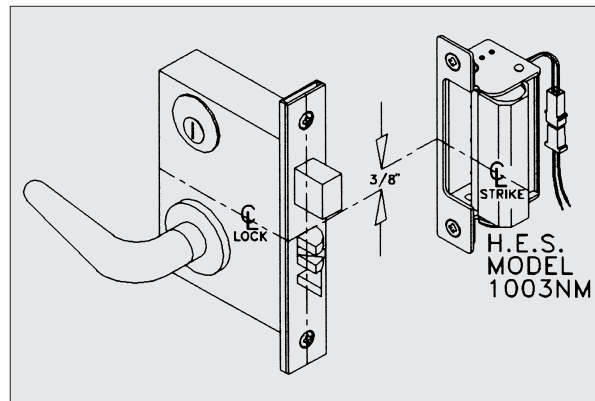
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closed after releasing the bolts or to remain in the open position to recapture an extended deadbolt. Other applications may require the electric strike to retain the deadbolt when it is extended and not release the lock. However, all of the specific models and applications can be easily accommodated by consulting the various manufacturers catalogs and sales staff.

The deadlatch on the lock in illustration six is positioned below the latchbolt. The electric strike shown is designed with material on the face plate to depress the deadlatch when the lock is in the strike cavity. With other lock configurations the deadlatch may be positioned between the latchbolt and the deadbolt. This



5. Another variation is the Falcon mortise lock. Here the deadlatch is positioned below the latch.



6. When a deadbolt is added, other considerations need to be made. By following the four steps, however, choosing a strike is an easy process.

requires the electric strike to provide material in the center of the face plate to accommodate the deadlatch.

Choosing an electric strike to fit your existing door hardware is actually very simple once you understand the relationships between the two devices. By keeping the four basic principals at hand, along with your manufacturers' catalogs, you should be on your way to becoming an access control expert.

The author is Vice President-Marketing for Hanchett Entry Systems, Inc. (HES).



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**COVER
STORY!**

A tale of two Locksmiths

*Ever lose a job simply because
you couldn't get all the pieces
together? Well, here's one lock
that's all in one.*



By Steve Gebbia

Act One, Scene One. Location:
Joe's Lockshop

fade from black

The scene opens with a customer entering Joe's shop.

Joe: Hello. Welcome to Joe's. What can I do for you?

Customer: Hi. I've gotta problem with theft at my business. Merchandise is disappearing out my back door. Think you help me?

Joe: Sure. How about if I come over this afternoon? I could look at the situation and give you my best recommendation.

Customer: Sounds great! Here's the address. Stop by soon. Bye.

The customer leaves.

fade to black

Act One, Scene Two. Location:
A Warehouse In A Nearby Town

fade from black

The scene opens with Joe and the customer at the rear door.

Customer: Here's my problem. Merchandise is walking out during business hours. I'm sure an employee is doin' it, but I can't just start pointing at people. I need to catch them in the act. What do ya think you can do?

Joe: Hmmm. How 'bout a lock with an alarm installed? With that you may not even need to catch anyone.

Of course, since this is an emergency exit, we're gonna hafta allow free egress, yet we need something that provides enough holding force. I'd say an electro-magnetic lock is your best choice. Do you need to be able to open this door from outside?

Customer: Na. There, is no reason this door should ever be opened - except during a fire or some other emergency.

Joe: No prob, then, how about something with a delayed egress feature. When someone attempts to exit, an alarm'll sound immediately, but the guy can't get out for 15 seconds. After 15 seconds, the door can be opened. This way you've got time to react or see who's trying to pinch

some of your goods. And by hookin' it in with your fire alarm system, I know the inspectors won't be bothering you. What'dya think?

Customer: Sounds like what I'm looking for. But what's it gonna cost?

Joe: Tell ya what. Let me get back to the shop and work up a quote. I can give ya a call early tomorrow?

Customer: Sounds good to me. Just remember, I need this done as soon as possible.

Joe: No problem.

Joe leaves.

fade to black

Act One, Scene Three. Location:
The Warehouse

fade from black

Joe is presenting his estimate to the customer.

Joe: Good Morning. Here's the estimate on that door.
he hands this estimate to the Customer.

Customer: Yikes, that's a lot of money! Then again, more than that walked out that door. When can you start?

Joe: I checked with my suppliers before I came out. I can

get everything but the power supply by tomorrow, that may take a couple of days longer.

I say we can get started in about 6 or 7 days. Once power supply arrives, I'll be right out.

Customer: A week? Too long. I'm sorry, but I can't wait that long. If I can't find anyone that can do it sooner, I'll call you.

Act Two, Scene One. Location:
Across Town At Mike's Lockshop

fade from black

The scene opens with our customer entering Mike's shop.

Customer: I hope you can help me. I called another Locksmith out for this job but he couldn't get the parts quick enough. Maybe you can!

Mike: I'll try. What kind of lock are you looking for?

Customer: Here, this is what he suggested. He apparently is having trouble getting the power supply.

Handing Joe's estimate to Mike.

Mike: Well, we both use the same suppliers so I probably wouldn't be able to get it any sooner. However, I may have a better suggestion. Can I stop by and see the door for myself?

Customer: Sure. Here's the address.

Mike: Okay. I'll see you shortly.

The customer leaves.

fade to black

Act Two, Scene Two. Location:
The Warehouse, At The Rear Door

fade from black

As the scene opens, the customer has just explained his problem to Mike.

Mike: Joe's idea is pretty good, but I think I've got a product that simplifies everything. It's the DynaLock 3101 Delayed-Egress System.

I was just reading about it in *The National Locksmith* magazine. Basically, it's everything that Joe suggested combined into one, easy-to-install, self-contained unit, including the power supply.

Customer: How does it work?

Mike: Well, to make it simple, there's a sensor on the lock that detects when someone is attempting to exit. This sounds the alarm and starts a 15 to 30 second time delay. After the delay period ends, the lock releases and door can be opened.

Customer: What if there is a fire?

Mike: No problem. Your building's fire alarm will trip the device releasing it instantly. Oh, and it also has an adjustable nuisance delay to prevent false alarms, and a bypass mode.

Customer: Bypass mode? What's that?

Mike: Actually there are two bypass modes. One has an adjustable relock time and audible alarm. The other has no relock time delay or audible alarm. In the first mode, if the door is not closed within the allotted time period, the alarm sounds, and the delay time starts as soon as the contacts are closed. In the second mode, the door can be left open for



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long periods without the alarm sounding.

Customer: But what if someone throws a shoulder into the door? Won't it release?

Mike: Depends, can you create 1500 pounds of force slamming your body against the door?

Customer: Okay. One more question. I heard that computers can be used to monitor doors. Can this lock be hooked up to my PC?

Mike: Sure! But the software comes separate from the lock.

Customer: Okay. How much is it?

Mike: Let me find out.

a short while later...

Mike: Here is your estimate, Mr. Johnson.

Mike hands the customer this estimate.

Customer: Hey, that's alright! It's less than what the other guy quoted me. How come?

Mike: Well, the device itself costs about the same as if you bought each component separately. But, since I don't have to physically install - and then wire in - each of those components, I save a lot of time on the install.

Customer: That makes sense. When can you start?

Mike: I checked with my supplier and they have it in stock. I can have it tomorrow morning and be back here in the afternoon.

Customer: Great! You've got the job.

fade to black

More and more manufacturers are making our job easier by making their products easier to install. Dynalock has taken a giant leap forward with the 3101 Delayed Egress System. Now, how easy is it to install? Follow me as I guide you through a simple installation.

DynaLock Installation

The physical installation of the DynaLock series 3101 is not difficult at all. The first thing you will notice is that all installations use the template for a right hand reverse bevel (RHRB) door. This is true even if you have a left hand door. The reason is that the "T" bracket that the magnet mounts to is non-handed. The 3101 series delayed egress device will work on almost any outswing door. (See photograph 1.)

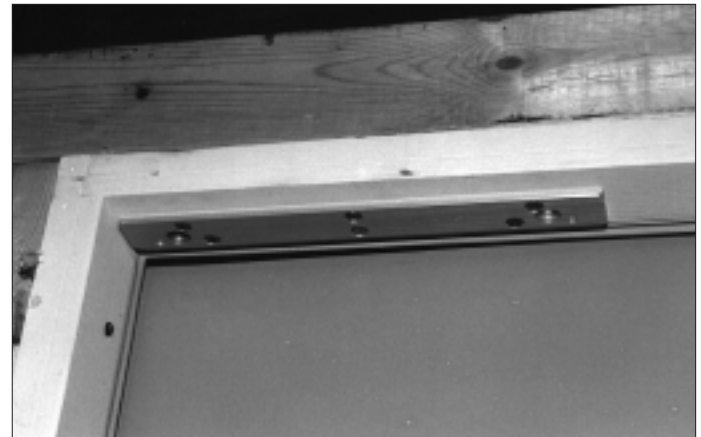


1. The DynaLock 3101 Delayed Egress magnetic lock.

To begin, make sure that the door closes and latches securely with the existing lockset. Any excess play when

latched must be minimized at this point. Up to 1/8" play when latched is acceptable. If there is more than 1/8" of play, the security of the installation may be compromised.

Locate and mark mounting holes. Tape the template to the door and frame. It should be located at the latch edge of the door and placed as far into the upper corner of the door as possible. Mark six holes on the door frame for mounting the T-track and one for the wiring access hole. Also mark three holes on the door - one for the armature mounting bolt and two for the locator pins.



2. Attach the T-track to the frame.

Drill all holes and install T-track. (See photograph 2.)

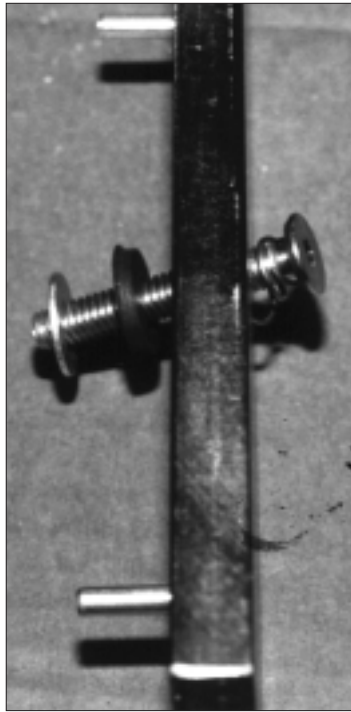
The T-track is held in place with (6) #8 flat head wood screws. It is important that the T-track is installed completely flat and all mounting screws must be driven flush. A 9/16" hole is required for wiring access. For the armature, drill one 5/16" hole all the way through the door and two 1/4" holes 1/2" deep for the locator pins. Enlarge the outside of the 5/16" hole to 23/64". This large hole is for the armature mounting bolt.



3. Attach the DynaLock to the T-track.

Install DynaLock to T-track. (See photograph 3.) Carefully slide the device onto the T-track. It should slide on very easily. If it doesn't, the T-track may not be sitting flat or a screw head may not be completely flush. Do not attempt to force the device onto the T-track. Secure the device with the allen set screw located under the sensor access cover.

Install Armature to door. Place the armature upside down on a soft, protective surface. Carefully drive the two locator

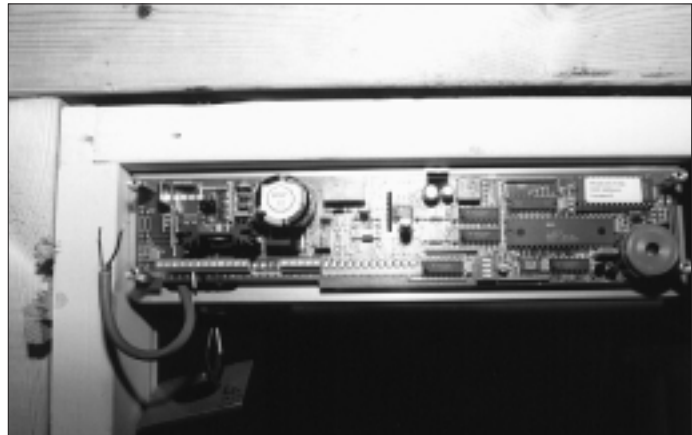


4. The armature with mounting hardware.

pins into the back of the armature. Be careful not to scratch or damage the front surface of the armature. Even a small dent can prevent the magnet from properly bonding with the armature. Install the armature to the door. The proper order for assembling the mounting bolt is (from the outside) : sex bolt, spacer (for hollow doors), steel washer, rubber washer, armature, spring, and mounting bolt. (See photograph 4.) When installed properly, the armature is able to move approximately 1/4" away from the door while bonded to the magnet. If it doesn't, the unit cannot function properly.

Install power supply. Unlike most electro-magnetic locks, the DynaLock does not require a special power supply. You may use any power supply that meets the power requirements of the device. It may be powered by either 12 volts at .75 amps or 24 volts at .5 amps, AC or DC.

Remember to take into account any voltage drop and the current draw associated with your wire runs and power source.



5. Bringing in the power leads.

Feed wire to device and terminate. Terminals 1 and 2 are for incoming power (See photograph 5.) You may also connect the device to your building's fire alarm system. This releases the device instantly if the fire alarm should sound. This is as simple as connecting two leads from the alarm panel to the appropriate terminals on the device. Once all wiring connections are made, replace the electronics cover on the rear of the device. Also replace the sensor bolt access cover (See photograph 6.)

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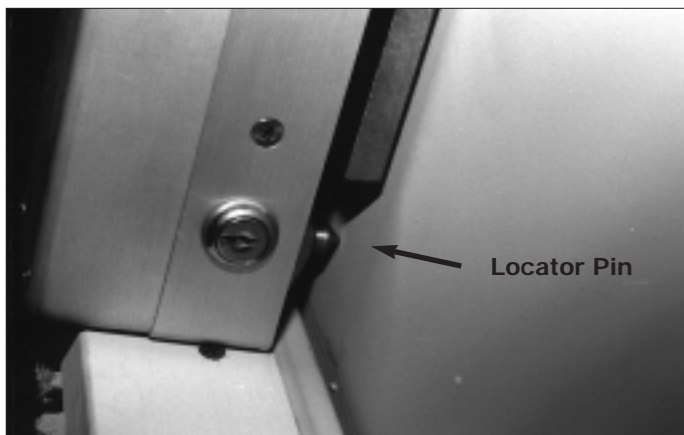


6. With the connections made, replace the covers.

Locate and install sensor bolt. Insert the locator pin into the sensor opening (See photograph 7.) Carefully close the door and allow the locator pin to make a small impression into the door (See photograph 8.) Do not allow the door to slam or close abruptly. Doing so may damage the sensor. Drill a 5/16" hole at this location. Insert the sensor bolt into this hole with the small allen set screw facing up. Locate and drill two 7/64" holes to secure the sensor bolt to the door.



7. The locator pin is inserted and ready for marking the door.



8. Marking the door for the sensor bolt.



9. Check sensor bolt alignment.

Check alignment of sensor bolt. (See photograph 9.) Slowly close the door and check to see that the sensor bolt does not bind on or hit the sensor cover. If it was located properly, this shouldn't be a problem.

Check operation of device. With the key in the neutral position, the unit should be armed. Normal motion of the door while mechanically latched should not activate the alarm or release the magnetic bond. Movement in excess of 1/4", however, should instantly sound the alarm and the magnetic bond should release in 15 to 30 seconds. (This time period is selectable by relocating a jumper on the circuit board). If the alarm sounds when the door has traveled less than 1/4" or if it did not sound once the door traveled that far, you will need to adjust the sensor bolt. Simply loosen the small allen set screw and then turn the large bolt inward or outward until the desired adjustment is achieved. Be sure to tighten the set screw when you are finished adjusting the sensor bolt.

Turning the key clockwise activates bypass mode A. This has an adjustable relock time and an audible alarm. If the door is not closed within the allotted time, the alarm sounds. The delay time starts as soon as the key is turned. This allows authorized persons to open the door for brief periods without the alarm sounding.

Turning the key counter-clockwise sets bypass mode B. In this mode, there is no relock time or audible alarm, allowing the door to be left open for extended periods without the alarm sounding.

As you can see, the installation is not very difficult. Like any new procedure, the first installation is the hardest. Once you have one job under your belt you have the confidence to tackle additional ones. You may consider yourself an "old dog," but this is one "new trick" that you can learn.

So, the next time you need a Delayed Egress device, think of the Dynalock 3101 series. Not only does it simplify your task, but factory technical support is also available.

For more information on the DynaLock 3101 contact DynaLock at (203) 582-4761.

**COVER
STORY!**



A Facilities Locking System

by Richard Geringer

Meeting the special needs of customers often involves specialty equipment, but always involves proper application.

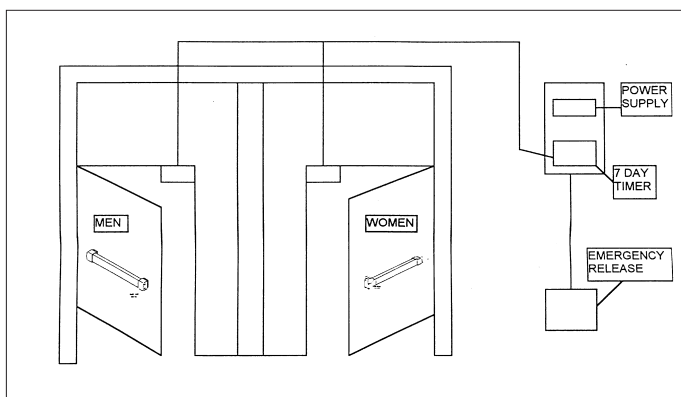
The Security Door Controls (SDC) Facilities Locking System was originally designed for six restrooms in the community parks for the City of Agoura Hills in California.

The Facilities Locking System utilizes the electromagnetic EmLock in its access control system with a timer, allowing the facilities to be secured at a specified hour each evening. The doors automatically unlock every morning. The magnetic locks that were installed also included a panic bar on the inside of the door in the event a person, using the facility at the time the door was secured in the evening, wouldn't be locked in for the night. Upon exiting, the door automatically locks.

Agoura Hills is a contract city, that is, many services are contracted as it is more economically feasible, rather than employ individuals dedicated to specific tasks such as law enforcement, which falls under the auspices of the Los Angeles County Sheriff's Department.

Previously, park maintenance management hired individuals on a daily basis to manually lock and unlock the public facilities. No provision was made during weekends.

If a group wanted to use the park, it had to make arrangements with management to pick up and return a key. At all times, the doors were secured at sundown and reopened at sunrise as management didn't want to encourage after dark activity, which could lead to crimes such as vandalism.



1. Simple line drawing showing component use and placement.

This was cumbersome and impractical from the park user's standpoint and costly to the City of Agoura Hill's management. Additionally on occasion, the locks were tampered with and had to be replaced.

According to Audrey Brown, the City of Agoura Hill's Community Services Director, a more efficient and economically feasible solution had to be found that would save monies, while falling into the parameters of user safety.

"The City explored several avenues with user safety paramount in our minds," said Brown. "We wanted a simple solution, but at the same time we didn't want someone locked in a public facility all night."

"We established a set of criteria that included simplicity of operation; it had to be economical, and we wanted something durable and powerful," Brown added.

Park management met with a lock and key contractor, who suggested installing Security Door Controls locks. As the leading manufacturer of access control devices, the company recommended its electromagnetic EmLocks.

"In net terms of how much this effort has saved us, it's saved us plenty," said Brown. "The initial investment of \$5,500 has more than offset the costs of using contract help. But it's the flexibility, the safety features and the zero expense of lock maintenance that has made the investment worthwhile," she added.

Continued on page 54

Continued from page 52



2. The SDC 1570 series magnetic locks. This lock has surpassed 1200 pounds of direct holding power in laboratory tests; and combines security, weather resistance, high performance and professional appearance.



3. For exit, the SDC 552 Exit Push Bar.

The Facilities Locking System Components

- The Facilities Locking System for a pair of restrooms (men and women) consist of: (See illustration 1.)
- 2 - 1575 - Electromagnetic Gate Locks or Exterior Door and Gate Locks (See photograph 2.)
- 2 - 552 - Exit Push Bars (See photograph 3.)
- 1 - 601 - Power Supply (See photograph 4.)
- 1 - 14-2 - 7 Day Skip-A-Day Timer.
- 1 - 701 - Emergency Release Key Switch (Optional) (See photograph 5.)

All doors unlock at a programmed time (i.e. 10:00 a.m.). The public uses restrooms till dusk and all doors relock at 7:00 p.m.

If a person is in the restroom at the time the doors lock, exit is uninhibited by simply pushing the push bar on the interior. The door will then close and lock automatically. The time clock will unlock all doors the following morning. All locking and unlocking times are field adjustable.

An optional key switch may be provided to unlock all doors in any emergency situation.

Considerations to Determine Minimum Holding Force

Magnetic locks were designed to meet fire safety applications by providing an auxiliary locking mechanism that has no moving parts to bind or wear out

for trouble free operation. This feature assures uninhibited release at all times. Because of the trouble free operation, they have become extremely prevalent in applications other than fire life safety.

Light Security Traffic Control

Any magnetic lock under 1,000 lbs or less of holding force should only be used for traffic control; the same as a light duty electric strike. A 850 lb magnetic lock can be overcome by force with good effort. A 500 lb lock could be overcome even easier.

Unlike light duty electric strikes which should break, a magnet may release by force and the door will simply close and relock.

Medium Security

A 1,000 to 2,000 lb magnetic lock could be considered medium security. Mounted to a steel door and frame or wood door and steel frame, this lock provides a good amount of integrity. These doors and frames may suffer damage when forced entry is attempted. When this lock is mounted to a narrow style aluminum door and frame, the door will shatter before the lock will release.

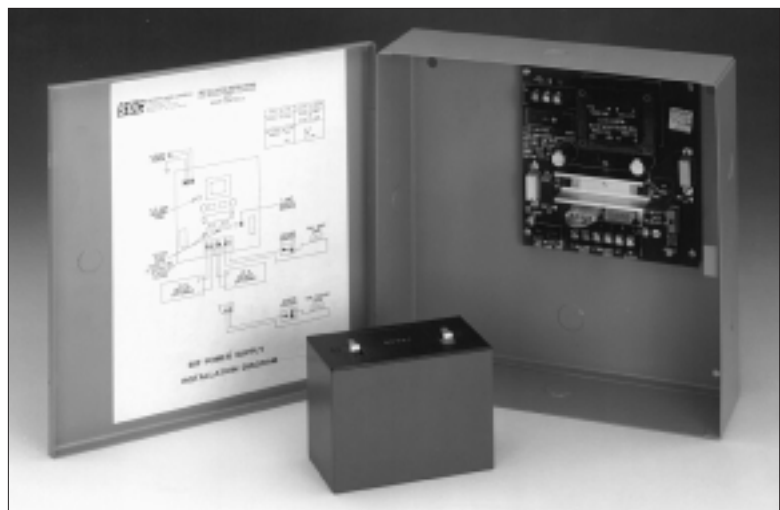
High Security

Magnetic Shear locks which are concealed in the frame header have from 2,000 to 2,800 lbs of locking strength and provide the highest level of security of any other magnetic lock. Even a steel hollow metal door and frame may be damaged beyond repair before the shear lock gives.

Because of the physical exposure a Shear Lock has when mounted to a herculite door, specifically the lack of integrity narrow style glass doors may have, a Shear Lock may not necessarily provide high security in such applications. A heavy duty bolt lock may prove better, provided fire life safety considerations do not prohibit such a lock. SDC does have a bolt lock approved by the California State Fire Marshall and the City of New York for fire life safety applications. The magnetic Shear Locks provide the most integrity when used with hollow metal doors and frames and wood doors.

Other Factors to Consider

The type of door and frame have much to do with the amount of integrity an electromagnetic lock can provide. It is

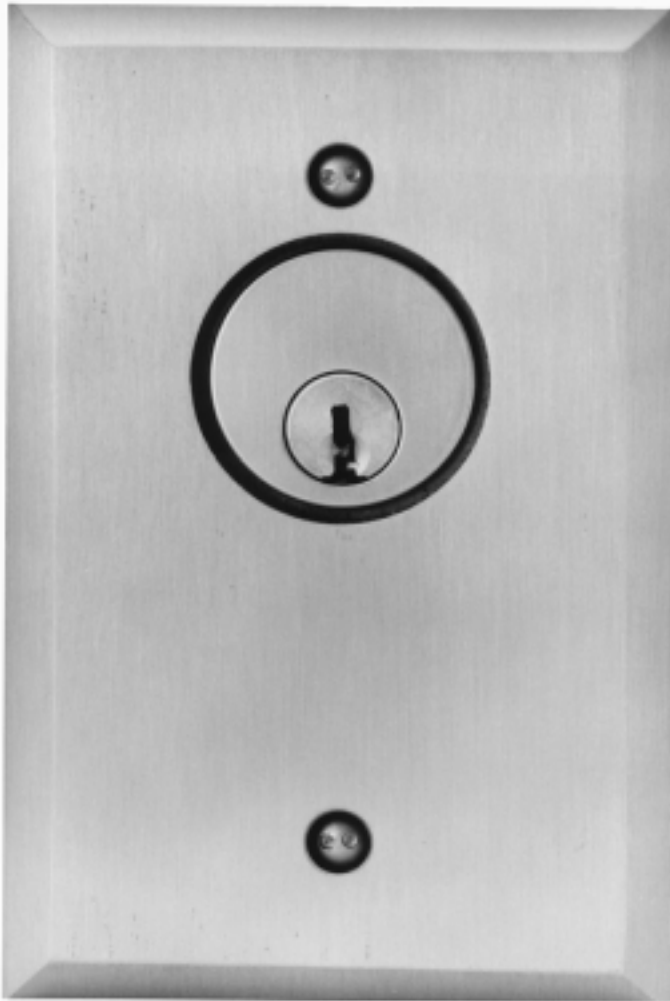


4. SDC 601-602 Power Supply.

also important to remember that wherever possible, the lock should be mounted on the opposite side of the opening from which a break-in would be attempted unless it is simply a traffic control application.

In essence a low integrity door may degrade a high security lock to a medium or light security level.

Basically, magnetic lock integrity may be broken down to the following:



5. For emergencies, the SDC 701 Emergency Release Key Switch.

Magnetic Lock Strength	Application
Under 1,000 lbs.	Light Security Traffic Control
1,000 to 2,000 lbs.	Medium Security
2,000 +	High Security

Facilities Locking System Applications

Other areas where the Facilities Locking System could be used are for malls, public stadiums, colleges, universities, and transportation centers.

Before installing any access control locking system, always check with local building and safety officials.

The author is Vice President of Security Door Controls. For more information on SDC products contact SDC at (805) 494-0622, fax (800) 959-4732.



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the REVOLVING commercial hardware door REVOLVING

Most hardware problems can't be covered in a class. It takes a working knowledge of product and good problem solving skills to match hardware with application.

by Steve Gebbia

Servicing Commercial Hardware is fun. It is built to take a great deal of both use and abuse. But, as with anything else, it does occasionally need repair or replacement. Sometimes the cause is abuse. Other times, the changing needs of how the door is used is the overriding factor. It can also be that the product originally installed was not appropriate for the given application. Perhaps it isn't designed for the amount of traffic the door will receive. Or, it just may not be strong enough for the daily use and abuse it has been receiving. Here are a few examples of problems with commercial hardware and how they were solved.

Problem 1, Beaten Into Submission....

The first example involves a heavy-duty lock that just couldn't hold up to

the rigors of daily usage. The lock is a Schlage D80-Athens with ELU option (electrically unlocked). This is a Grade 1 Storeroom function lockset. The ELU option allows the exterior trim to be unlocked by applying electrical power to the unit.

This lock was installed on the employee entrance of a local company. This is a double door application with the right hand door being the active leaf and the left hand leaf being inactive. The inactive leaf is secured with extension flush bolts. To the right of the doors is a card reader. Although this lock allows access by key from outside, it is usually released by using the card reader.

It slowly gives up...

Just over a year after the contractor installed it, the first problems appeared. The inside spring cage had broken, preventing the inside lever

from returning to the neutral position. Both spring cages were replaced with the new, heavier ones. A few months later, the inside spring cage broke again. Both levers were also beginning to show signs of excessive wear, along with the hubs that transfer the motion of the lever to the spring cage. In fact, the outer hub had a large groove worn almost halfway through it. At this point both spring cages and both hubs were replaced.

These problems were definitely caused by abuse so no warranty could be provided. The customer was advised that unless the abuse stopped, or a more suitable lock installed, the problems - and the bills - would continue.

On the Trail of the Culprit ...

Up to this point, the Locksmith had been servicing the symptoms. Now it was his task to find the underlying



1. For this application, a Von Duprin 99 ELR is used.



cause - and a long-term solution. Like solving any mystery, it starts by asking why. After all, this is a heavy duty lockset, designed for years of trouble-free service. Why wasn't it holding up? What were these people doing to cause the lock to die early?

Let's look at how the door was being used. The card reader is located to the right of the door. This makes it convenient to swipe the card with the right hand while opening the door with the left. Because the lock operates silently, the only indication that it is unlocked is a small, hard to see LED on the card reader.

Of course, this left each user in the position of trying to view the card reader's LED while stretching across the door to grasp the lever. The right hand swiped the card while the left pulled on the door - pulling outward on the door before it had unlocked. Unfortunately, this was the simplest way to use the door, even though the lock was never meant to be used that way.

The only possible result of this kind of abuse is the wear of the spindle, hub, and spring cage that we have seen. It also meant that more problems could be expected if a more durable solution wasn't found.

A Solution Emerges...

Now that we know the cause of the problem, we can begin to formulate a long-term solution. What is it exactly that we need? What must this lock provide? The easiest way to answer these questions is to make up a list of the features that are required by the new lock.

This new lock must:

Be able to be unlocked electrically. Since the card reader is the normal means of entry, the lock must be able to be released by it.

Have rigid exterior trim. The bulk of the damage was done because the trim was electrically unlocked. A lock with rigid exterior trim will last longer under the existing conditions than one with trim that is unlocked electrically.

Have keyed access from exterior.

Allow barrier-free access and egress.

Be compatible with a double door application.

Be attractive. (This is the company's district headquarters.)

Be of high quality and very

durable, able to withstand very high levels of traffic and abuse.


One possibility is an electric strike. A detention grade strike activated by the card reader is certainly durable. However, this doesn't solve the problem of wear to the interior trim. Excessive downward force on the interior lever continues to cause problems.

A PIR could be used to release the strike as someone approaches from inside. However, past experience shows that even though they no longer need to turn the lever to exit,

most people do. This solution only postpones the inevitable.

Another possibility is to install an electromagnetic lock with a request-to-exit touchbar used to release it from inside. This system can easily be integrated into the existing access control system. A new, key-operated exterior switch would need to be installed. Unfortunately, in this instance, a magnet does not fit on the frame with the existing parallel arm door closers. Re-installing these as top jamb installations allows enough room. However, given the past history of abuse this opening has received,

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2. To handle the weight and abuse this door receives, a continuous hinge is applied.

the problem is simply transferred to the door closers.

The best solution is an electrically released exit device. The Von Duprin 99 series with Electric Latch Retraction option (ELR) was the device of choice. Instead of unlocking the trim, the latch itself is retracted when power is applied. NL function trim allows key operation from outside while maintaining Storeroom or Vestibule function. A touchbar style exit device is one of the strongest, abuse-resistant locks available.

Installing the Solution...

The Locksmith provided and installed the device. He also provided the power supply unit. Because this particular alarm and access control system is integrated into one large, complicated system (one with a history of trouble), the alarm company that installed and maintains the system was called to install the power supply and completed the wiring to tie it into their system. This alleviated the Locksmith of any responsibility for problems related to the access/alarm system. In accordance with local building codes, the final connection to AC power was completed by a Licensed Electrician.

Since there are other doors in the building with 99 series devices, the new lock does not look out of place. In fact, the only way to tell it is any different than the other exit devices is the very solid "kerchunk" of the latch being retracted. It is also much easier to use than the previous lock. (See photograph 1.)

From inside, simply depress the touchbar. From outside, swipe the card and pull the door open. The customer now has an attractive device that is sure to provide years of trouble-free service - even with their technicians beating on it on a daily basis.

Problem 2, Coming Unhinged...

A common problem for commercial steel doors is hinge troubles. Within both the door and the door frame are steel mounting plates that the hinges are screwed to. These plates are welded in place. They have the nasty habit of breaking away from the door or frame to which they are mounted.

The causes are clear. Rust is a major player in this type of problem. Water buildup, particularly at the bottom of the door, is a leading cause of hinge failure and hinge mounting plate troubles. The other major cause is abuse - both intentional and non-intentional. A third possibility is settling of the building, shifting of the frame, or other similar occurrences.

In a commercial application, abuse ranks high on the list of causes of lock and hardware failure. In this case, people like to place a wedge, a block of wood, a stone, or other object between the door and the frame on the hinge edge. On a steel door, this can damage the hinges and can lead to failure of the welds on the hinge mounting plates. On an aluminum door, this almost always stretches and

distorts the aluminum of the door frame. Once this metal is distorted, it is never as strong as it originally was. Although you may be able to pound it back into shape, the weight of the door will cause it to distort again.

...and Putting it All Together

There are several cures for this type of problem. These range from reinforcing pivots to continuous hinges. The type of solution you choose should be based on how much use the door receives. A door that is rarely used will be more than adequately served by a reinforcing pivot.

But, a door that is heavily used should be hung with a continuous hinge - particularly if it is a heavy door.

Continuous hinges are available in several styles to meet your needs. (See photograph 2.) The most common is the full surface style. This is easily installed and is actually sturdier than the hinges that the door was originally hung on. Instead of carrying the weight at three locations, with the top hinge taking the brunt of the load, the weight is distributed evenly along the entire height of the opening.

Around and Around we go...

One of the more unusual openings encountered is the revolving door. These have a variety of different ways they are locked. One of the most



3. Although a new, raised floor would have been preferable, the lowered door lock was the best solution for this customer's revolving door lock problem.



popular is some sort of surface bolt. This may be located at the top or the bottom of the door. They are usually located on two adjacent leaves of the door. To deter vandalism and inadvertent locking, they are almost always key operated. These locks are fairly simple to service.

This type of door opening is subject to the same types of stress and problems that other doors encounter. The door is mounted on a central pivoting axis, so you won't encounter any hinge trouble here. Major problems with these, such as a door that binds on its axis, are best left to a company that installs them.

In our case, a local institution had a door that was not locking properly. It was determined that the cause was due to the brick floor that it is mounted on. A portion of the floor near the door had settled. Because of this, the bolts could no longer engage the strike plates in the floor. One possible repair was to relocate the locks to the top of the door and have them lock into the top plate of the revolving door's circular frame. Unfortunately, this door is 10' tall. Placing the locks this high off of the floor makes it difficult to lock and unlock the door.

The other solutions included either shimming the strike plates to accommodate the difference or to replace the sunken portion of floor. Neither of these was acceptable to the customer. Also, shimming the strike plates is not secure because the entire height of the bolt is still above the floor itself. If the strike plate should become loose, it would jeopardize the security of the opening.

The floor had only sunk about 3/4", but this was enough that the bolts could not securely engage the strike. Lowering the lock 3/4" on the door allowed proper operation of the locks without hindering the rotation of the door, although the body of the locks would hang slightly below the bottom of the door. The customer agreed to this solution since they could not afford to replace the floor. (See photograph 3.)


The Fun is Just Beginning ...

As you can see, these are not the types of problems you see discussed in Locksmithing classes. To service commercial hardware successfully, you must be open to new ways of approaching a problem. In the


residential market, if a lock is broken, you repair it or replace it with a similar one.

In the commercial market, this isn't always the best approach. When servicing commercial hardware, you should take into account several factors. How is the door used? This includes not only how many people use the door, but also the way they operate the door. Abuse is a big factor to be considered as well. If the opening is in a high traffic area, expect a similar level of abuse. Vandalism and likelihood of attempted forced entry should also be taken into account.

Think about everything that might happen to that door opening. Chances are they will eventually all occur.

Servicing commercial hardware requires that you are constantly thinking of new and better ways to protect an opening. This is where the real fun begins. After all, why did you become a Locksmith? Was it because you like to work with your hands? Maybe you enjoy installing high quality hardware? Or do you find satisfaction in solving your customer's problems? All of this is what servicing commercial hardware is all about. 

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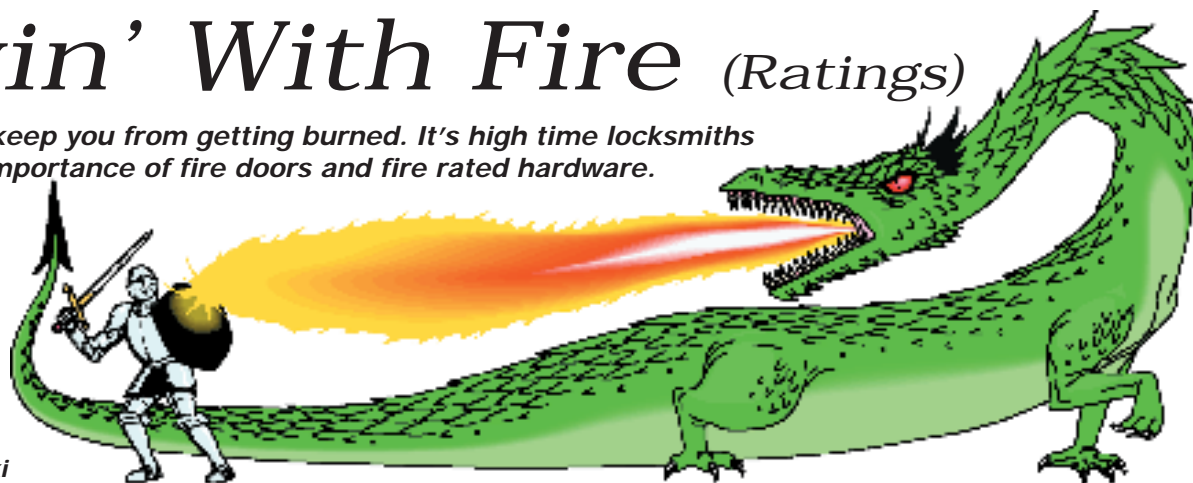
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Playin' With Fire (Ratings)

Ignorance won't keep you from getting burned. It's high time locksmiths understood the importance of fire doors and fire rated hardware.



by Jake Jakubowski

I don't know how many generations of kids have heard the admonishment: "If you play with fire, you're going to get burned!" And, for many of us, who decided to ignore the advice, that's exactly what happened! We got burned.

Now that we're all grown up and are pursuing our chosen profession - we don't have to listen to old adages, homilies and truisms. And, once again, many of us are playin' with fire. And, just as sure as I'm writin' this, some of us are going to get burned in ways we don't even want to think about. Like right in the wallet (or wherever you keep your foldin' money) or worse.

The reason some of us are likely to get burned is because we're playin' with the fire ratings on doors and door hardware. Actually, "playin'" is not the proper term. "Blunderin'", I think, would be a more apt description of what many locksmiths who service the hardware on fire rated doors are doin'.

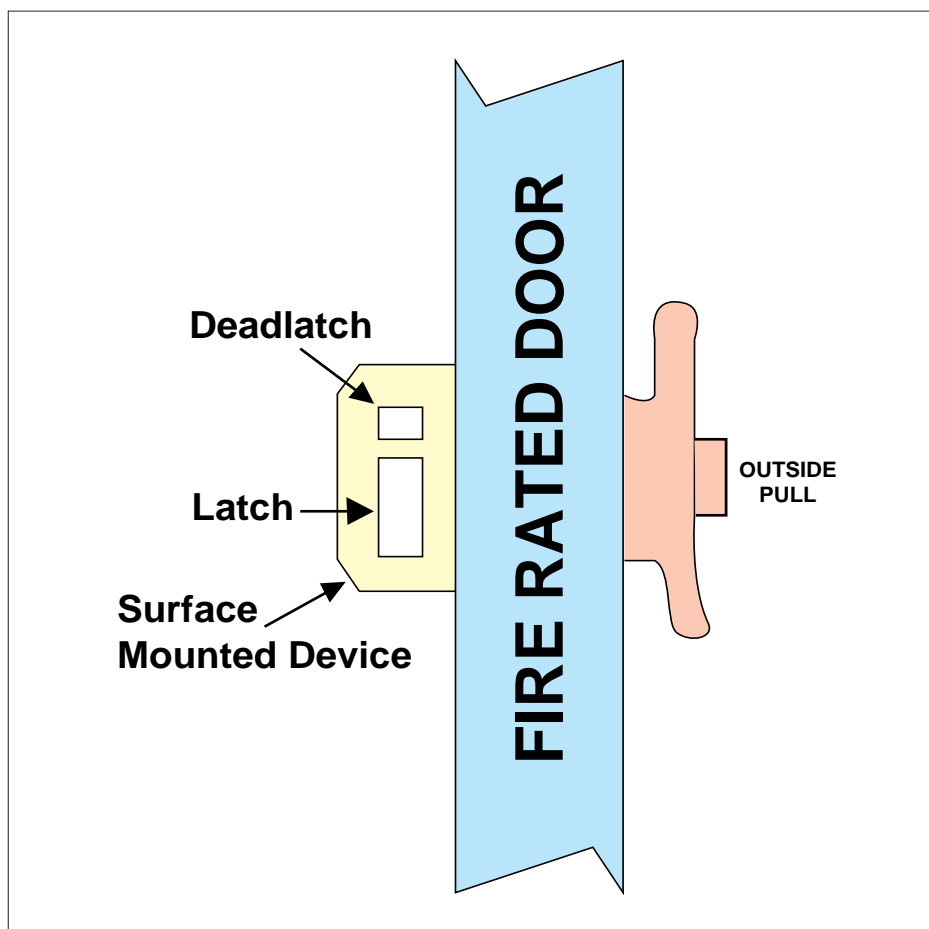
Errors in service procedures, techniques and hardware installation on fire-rated doors, are frequently committed through ignorance or poor judgment. Unfortunately, many errors are committed by locksmiths and service personnel with full knowledge and awareness of the impropriety of their actions. The last group just doesn't care about the law, Life Safety Codes or common decency. They just do it, grab their money and run! But both groups, especially the first bunch, need to realize that the law does not make any distinctions between "knowin'" and "not knowin'." Nor does a judge want to listen to someone sayin' "I didn't know the gun was loaded!" Like the old sayin' says:

"Ignorance may be bliss, but under the law, ignorance is no excuse!"

I know, I know. I mixed my metaphors! But I did it to emphasize my point! Which is: If you do it wrong - it's your fault. Period! Whether you install the wrong - or non-rated hardware - on a fire-rated door through ignorance or willfully, the consequences of that action could have catastrophic consequences! In addition to property loss, your actions could result in the loss of life! Should

that be the case, you will definitely be in for a no fun-type of an experience if the hardware you installed was found to be unacceptable and non-rated!

To avoid the possibility of law-suits, criminal actions and the specter of the smell of burning flesh on your conscience; the first thing you should do is learn to distinguish between fire-rated (or labeled) doors and non-rated doors. That's a simple enough process. Just look on the upper, hinge-side edge of the door for the



1. Representation of a typical fire rated panic device.



Continued from page 60

appropriate Underwriters Laboratory label. That label tells you the door's rating. In turn, that information tells you what the rating of the hardware you install on that door needs to be.

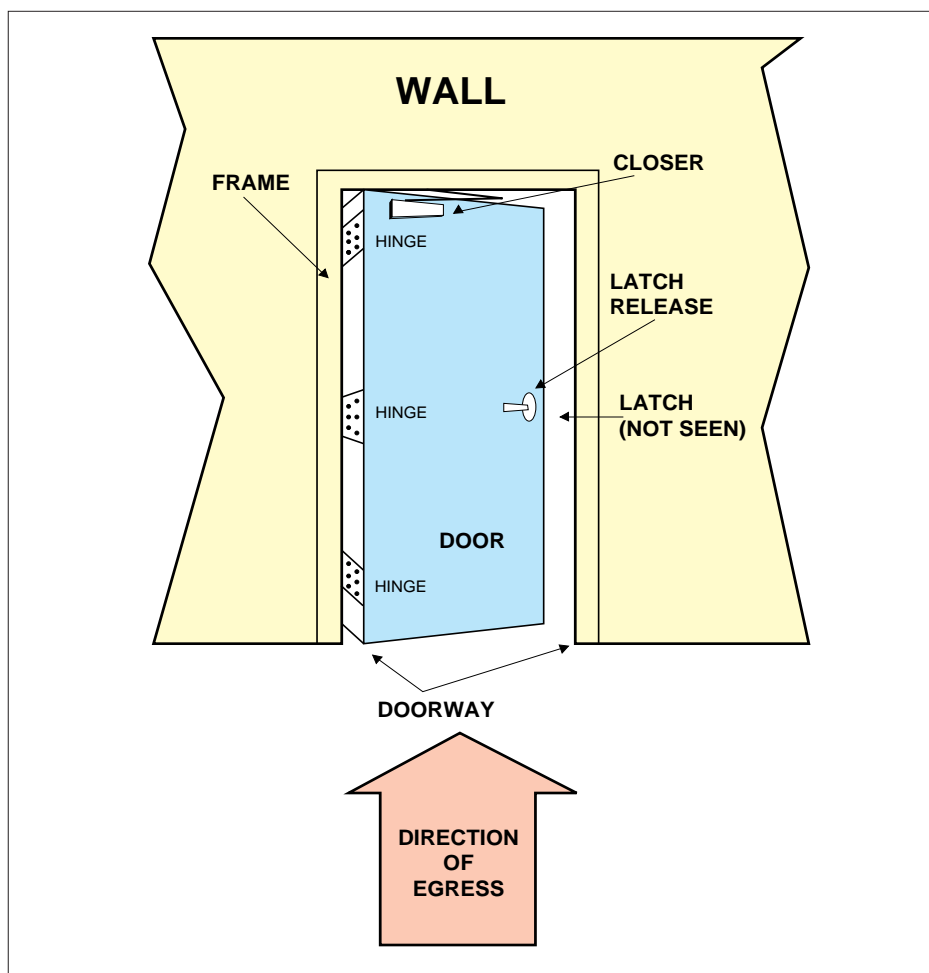
Once you have learned to distinguish between fire-rated and non-fire-rated doors and hardware, you should make an effort to use the terms separately. What I mean by that is that you should get out of the habit of calling fire rated hardware "Exit" or "Panic" hardware and call it just what it is: "Fire-rated hardware." Or a "Fire-rated panic device." Or, "Fire-rated closer," etc.

Although the tendency is to use terms like "panic hardware" or "emergency exit device" when talking about rated and non-rated hardware alike, it should be understood that although fire-rated hardware can be considered panic hardware and used on a non-rated door; non-rated hardware is never to be considered for use on a labeled or rated door!

Among other requirements, a UL listed, fire rated panic device (i.e. a knob-set, panic bar or lever set) has to have a dead-locking plunger or guard bolt to resist end pressure against the latch when the heat of a fire causes the door on which the hardware is mounted to swell, twist and distort. (See illustration 1.) And, if the hardware is fire rated, it will carry a label telling you it is fire rated. Non-rated hardware is not designed and tested to stand up to the thermal related pressures that are present during a fire.

The deadlocking feature serves two purposes on a fire rated door. One is to prevent unauthorized or illegal entry to the secured premises; and, two: it secures the door in a closed position in the event of fire and explosion. In a fire/smoke situation, this feature would actually help delay - within the limits of its rating - fire from migrating to non-involved areas of the building. At the same time, people could continue to exit from the building.

Another misconception a lot of folks have about fire rated doors is the extent of the rating. When dealing with the fire rating of a door (whether for field-testing or under field use conditions) you need to be aware that the rating encompasses the entire door and all of its components! (See illustration 2.) In this context, a fire



2. When a door is fire rated, every component of the exit must meet or exceed that same rating.

rated door includes the doorway, frame, door and miscellaneous hardware such as: hinges, closers, latches, latch releases, etc. that may be a part of the integrated whole (Refer to NFPA 5-2.1, etc.).

And, if you, as the locksmith servicing this door, replace the hardware, repair the hardware or change the hardware on any of the door's interrelated components; or you change, replace or substitute any of the hardware on the door with inferior, non-rated hardware, you have effectively voided the rating for that door! Even if you replace fire rated hardware with labeled, fire-rated hardware, you can violate the integrity of the door if the new hardware does not have the same footprint of the existing hardware, requiring you to drill or modify the door prep. That's something to keep in mind when upgrading a fire rated door for ADA compliance.

Which brings up another point. According to the best information I have been able to find, all fire rated doors should have the minimum

opening force allowable by the Authority Having Jurisdiction (typically the Fire Marshal). However, the closing and latching of a fire rated door takes precedence over ADA opening force limits! Unfortunately, at the time of this writing, I have not been able to locate any rulings - either administrative or judicial - that would tend to bear this out. The best course of action in this scenario is to consult with the AHJ, and "git it in writin'."

Back to ADA upgrades on fire-rated doors. If you are upgrading a door and installing a leverset or door closer to do so, there is no problem as long as the leverset or closer fit the existing factory cutouts in the door. Additional holes and/or door prep void the existing fire rating of the door. In most instances, minor modifications (i.e. drilling support post holes for a leverset, new door closer mounting holes, etc.) are overlooked. However, should the door fail to perform under fire conditions, the finger can always be pointed back at your work.

While I'm on the subject of leversets on fire rated doors, many



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lever-sets - especially mortise type levers - have fusible links in them that, when the temperature reaches 600°F, melt and cause the levers to become rigid. This is to preclude debris from the ceiling or upper floors from falling on the lever, opening the door and allowing the fire, noxious fumes and smoke to expand into unaffected areas of the building. The fusible link in this case, is a containment feature of leversets and is not to be confused with the fusible links used by door closers.

An immediate argument that comes to mind for not using fusible links that anyone trapped inside the danger area could not get out. However, the temperatures required to activate the link is way beyond what any individual could survive. Most likely, the smoke and fumes would be life threatening long before the heat reached 600°F.

(NOTE: The NFPA's "Life Safety Code Handbook" (A-5-2.4.3.8) points out that fusible link actuated automatic door closers do not qualify as [horizontal] exits because smoke might pass through the doorway before there is sufficient time for the heat to build up to the point where it will release the door for automatic closing.)

Door closers on fire rated doors can take the form of surface mounted or concealed closers. They can be automatic or passive (passive closers pull a fire door shut after it was electronically released from its hold-open position or a mechanical closer that is on a fire rated door that does

not have a hold open feature). Or, they can be remotely activated, or activated by a self-contained smoke detector. The main principal governing door closers on fire rated doors is they are capable of closing the door with sufficient force to cause the latching mechanism of the door's locking device to engage the strike plate. Most of the major door closer manufacturers provide a wide variety of closer functions and accessories to meet virtually all Life Safety requirements.

Again, I want to stress that when replacing, servicing or repairing fire rated closers, you must maintain the same product foot-print. Another thing about replacing hardware - especially door closers - the closers must be mounted on a fire-rated door with sex-bolts. They cannot be through-bolted or simply screwed to the fire-rated door. That goes for rim mounted devices, mortise devices as well as cylindrical and surface mounted devices.

The bottom line is: If you should put non-rated hardware on a fire-rated door and that hardware fails to perform in an emergency - you can be held liable! The extent of that liability

is going to depend upon the seriousness of the loss incurred. Even if your customer requests and signs for non-rated hardware, you can be named as a co-defendant in any action that results from a loss caused by that hardware.

If you're thinking to yourself all you have to do is have your customer sign a "release" and that'll let you off the hook in the event the gooey stuff hits the fan. Think again. Although such a release may be considered evidence of your good faith and intentions, it is also a glaring indication that you knew better than to use that hardware to begin with. In effect, by having your customer sign a release, you are saying: "Hey, this ain't the way it should be, but if you want it and you're willin' to pay for it ... I'll give it to you!"

What's the best way to keep from getting burned when it comes to fire-rated hardware? First learn all you can about fire rated hardware, NFPA requirements and the Life Safety Codes. Then: Do it right - or don't do it at all. 'Cause if you persist in playin' with fire ratings, you are going to get burned. Y'all heah me now? **INL**



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by
Dale Libby

The S&G 6120 Electronic Lock Revisited

The new and improved
is tested out and
reviewed by Dale.

I was recently asked to do an article on the S&G 6120 electronic lock. I have had a lot of experience installing these locks for several safe companies due to guarantee work. The safe companies in question would send me a new lock to replace one in a safe under warranty. I would then return the defective lock back to the manufacturer of the safe before I could be paid.

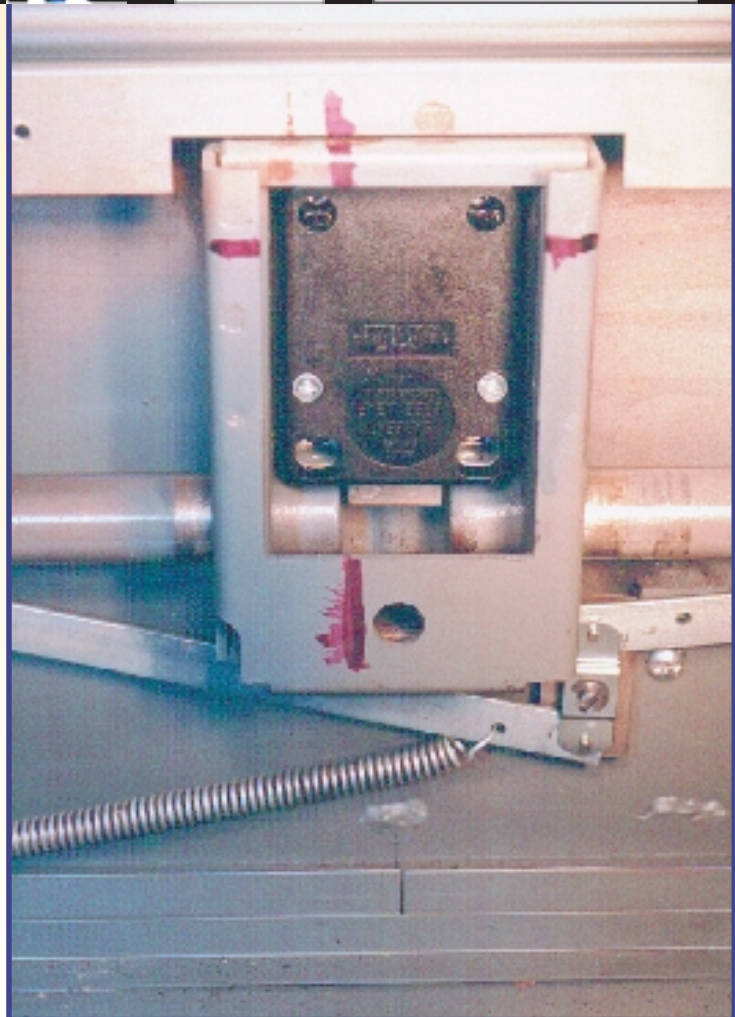
The main problems with the early locks had to do with bolt end pressure, battery replacement, or bolt not withdrawing far enough. A lot of the problems had to do with the original installation of the lock by safe manufacturers. They made the clearances too close. This and all electronic locks require full clearance around the bolt. One way to service these locks when they fail is to take all pressure off the bolt and try the lock again. This can be done by turning the bolt opening handle and talking all pressure off the combination lock bolt and trying the combination again. Another trick is to replace both key pad batteries (9 volt) with new ones, one at a time. This usually solves most lock outs. To repair the safe or chest, one might have to grind the handle cam or other obstruction to give the proper clearance.

I am very pleased with the recent re-emergence of the New/Improved S&G 6120 electronic combination lock for many reasons. There have been a lot of inner improvements on this lock that make it very dependable and safe from electromagnetic and shock attempts at opening. The combination remains in memory for 10 years without batteries. This is also a very customer friendly lock.

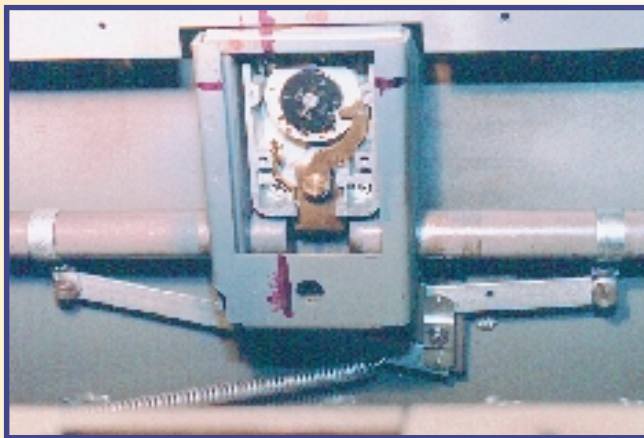
As I earlier stated, I have seen this lock on a lot of expensive gun safes, or if not original equipment, at least it is offered as optional equipment. The big selling point besides the ease of opening, is the five seconds it takes to dial the combination and open the safe



1. Mosler GSA two drawer file cabinet with Ilco (Precision) combination lock in open position and opening handle in down position.



3. New S&G 6120 lock installed. Note the four through the cover screw holes for the four lock mounting screws.



2. Manual combination lock mounted in VD position.



4. The electronic keypad mounting ring with 1/4" connector and cable. Top of ring has no spring clip connector.

or container. It seems that a gun owner wants to be able to open his or her safe quickly and easily and as fast as possible.

Let us walk through a simple replacement of a manual combination lock with a 6120 electronic lock. Along the way, I will discuss the differences between the LaGard Swing bolt lock and the S&G Lock. There are a couple of major differences and some very comparable similarities. You be the judge, price notwithstanding!

For this little experiment, I chose to install the 6120 on my GSA Gun and Camera safe container. The 6120 is not yet rated as a Manipulation Proof Group I lock, but it is under consideration by Testing Labs. After dialing four incorrect combinations, the lock shuts down for 15 minutes. For added security, a programmable 1 to 9 minute delay option can be added.

After the delay, a valid code must be entered again.

I must mention (before I forget it) that this lock is *not* made to have anything attached to the end of the combination lock bolt. This lock could not be used in the Diebold Cash Gard type installations, where a block of Aluminum is attached with two screws to the end of a mechanical Diebold, S&G, or LaGard combination lock. The bolt is for blocking movement of locking parts, and not moving any blocking bolts.

Photograph one shows the Mosler GSA container with an ILCO (Precision) group II combination lock installed. The door is in the open position with the opening handle

opened in the down position. Since this is my own container, I have not installed a Group I lock.

In photograph two we see the inside of the container with the lock installed in the VD (Vertical Down)

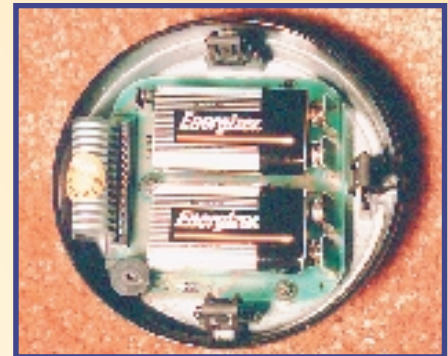
position. The bolt blocks the inward movement of the two horizontal bolt bars. When the bolt is retracted, there is enough room for the two bolt bars to move inward under the withdrawn bolt. There is plenty of clearance for this when the bolt is in the unlocked position.

One of the main differences between the LaGard Swing Bolt lock and the S&G 6120 is that the 6120 is universally handed, exactly like its mechanical (non-electrical) counterpart. It can be instantly mounted Vertical Up, Vertical Down,

Left Hand and Right Hand. (VU, VD, LH, & RH) There is no modification needed to the lock itself.

The combination lock bolt on the LaGard Swing Bolt lock has to be handed properly before it will work. This can be done in the field and requires the removal of a pivot pin, the reversal of the bolt, and the replacement of the electronics board, all of which takes about 15 minutes on site if you know what you are doing.

Handling the circuit board is dangerous. There is always the



5. A nice feature is the absence of wires and a battery clip. Instead the 9 volt batteries simply slide into position.

NATIONAL

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potential (pun) for static charges and other EMF problems when any electronic board is handled.

In the new 6120, this problem has been eliminated by making the lock with four through bolt holes in the back cover. With the new lock, the back cover never has to be removed when installing.

Photograph three shows the 6120 S&G lock installed in the GSA container. On this particular type of high security container, one cannot install a swing bolt type lock. It will not work. If you look closely, you see that there is clearance between the 6120 extended lock bolt and the two locking bolt bars.

This fact is very important on all electronic locks. They are very prone to bolt end pressure. When the correct combination is punched in on the 6120, the bolt withdraws into the lock body with the same exact dimensions of the standard 6700 series combination locks. This gives the clearance for the lock bolts (or in other configurations, the handle cam) to move when the combination is entered. About six seconds later, the bolt extends. When the locking handles are again extended, the 6120's bolt springs into the lock position, again blocking the bolts (or handle cam).

Let us now see what is happening at the front of the safe. This is shown in photograph four. There is a large difference in the installation between the LaGard Swing Bolt Lock and the S&G lock.

The Swing Bolt lock requires a 9/16" hole to pass the electronic cable 8-pin connector clip or a \$125 crimping tool and extra



6. The completed installation.

8-pin clips. If you have ever tried to install this lock without an electronic crimping tool, you are in for a lot of work. I know. I ground, filed, cut, burned, and Dremeled a 9/16" hole in a money safe hardplate. It took over two hours to do this. I immediately went out and purchased the crimping tool and extra clips. Once was enough.

The S&G 6120 uses a 1/4" clip with four wires to connect the lock to the keypad. There is no extra preparation or special considerations when installing this lock except to make sure that there are no sharp edges in the spindle tube or hole to snag the electronic cable. The cable clip fits through all 1/4" or 5/16" spindle holes.

Photograph five shows the back of the keypad with two Alkaline Batteries installed. The connector clip in at the upper left hand corner of the top battery. Another nice feature of how these batteries are installed is that there are no wires and 9 volt battery caps.

The batteries just slip onto the board. I have serviced a lot of Swing Bolt keypads where the wires for the battery caps have broken due to harsh and/or incorrect battery replacement. The fix for this is to buy new battery caps at Radio shack for about \$2 and solder them in place.

On the 6120, one has to support the back of the clips and slide the batteries firmly into place. This is identical to how most smoke alarm batteries are installed. This should eliminate battery connector replacement problems.

In photograph six we see the completed installation of the 6120 combination lock and keypad. The new and improved lock is really strong. Along with the EMF potential electrical problems that have been solved, the lock feels and sounds

stronger. The factory combination 1-2-3-4-5-6 opens the lock.

Another difference between the LaGard and the S&G keypad is that the S&G keypad also has all the letters of the alphabet along with the usual

numbers. Also included are the letters "Q" and "Z" which are not on the standard telephone keypad.

Like the way the new lock mounts to the safe with the four bolt holes. The keypad is plastic coated and will give years of good service. Replace with the 6120 S&G electronic Lock and Prosper. **INL**



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BUSINESS BRIEFS

News from the Locksmithing Industry

INDUSTRY INTERVIEW...

Well, we finally tracked him down. Thomas A. Mazzone, that is. Tom has been a locksmith for the last 10 years and currently operates Mazzone Lock and Key, out of Streamwood, Illinois.

As a *The National Locksmith* technical writer, Tom has been instrumental in supplying us with the latest and hottest breaking news in domestic auto service.

Tom, can you describe a little of the history of how you came into locksmithing?

As a teenager, I was particularly intrigued by a short story by O. Henry entitled "A Retrieved Reformation." The story depicted the fictitious character Jimmy Valentine, safecracker extraordinaire, who, although a reformed burglar with the police in pursuit, saved a small child who was locked in a bank vault. This story so interested me that I decided to look for training in the locksmith field. As I served my apprenticeship as a mechanic, repairs on recovered theft vehicles allowed me the experience needed to learn automotive locksmithing on the job.

Having been in the field for 10 years, Tom, what do you find to be the most enjoyable part of locksmithing?

I would have to say that the most enjoyable aspect of this field has been meeting people from around the country at trade shows, training seminars, and association meetings. The information shared and camaraderie is immeasurable.

Now, let me ask, what do you find to be the most challenging aspect of being a locksmith?

Probably the most challenging aspect of this industry has been trying to amass a Rolodex of people to call when you need technical support or questions answered in a timely fashion. Locksmithing is a "now" business and if a situation comes up where you are about to embark on an area of repair that is not your strong suit, it is best to either know someone trustworthy to subcontract to, or someone willing to help guide you through. I consider myself very fortunate with the network of locksmiths that I have become acquainted with through the Greater Chicago Locksmith Association.

Throughout your 10 years as a locksmith, Tom, what changes have you seen take place in our trade?

I have seen the industry, in my short time of exposure,

go from largely mechanical locking devices to card access, CCTV monitoring, Radio Frequency controlled key fobs to lock and unlock cars and trucks, computers, computers, and more computers! Competition within today's market has brought about the birth of very high tech theft deterrent systems to deter today's high tech thieves. Locksmiths and security specialists are going to always have to stay at least a step ahead of the thieves.

In light of going high tech, Tom, what direction do you feel the locksmith trade is headed?

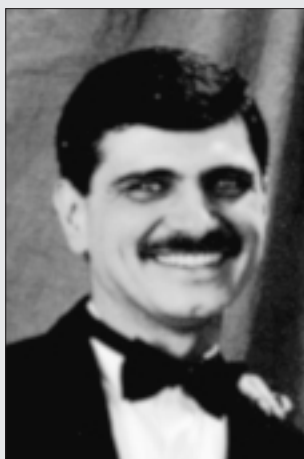
I firmly believe that the locksmith is headed for an extremely high tech world. With the cost of training and time spent, the locksmith and security specialist will be better able to combat high tech crime in today's world. Unfortunately, without the proper knowledge and skills, the locksmith will have some very serious considerations for his/her future.

How do you think this is going to affect the locksmith?

Probably the biggest change for the locksmith has been the amount of training he/she will need. Within the automotive section of locksmithing alone, the average locksmith can see how many more specialty tools are required to do today's service on the newer vehicles equipped with P.A.S.S. Key, MATS, MRD, VTD, SIR, etc. If the locksmith is not willing to take the time to train for the future, it is eminent that he will be eventually phasing himself out of automotive locksmithing. This will also eventually apply to other aspects of locksmithing and security as computer knowledge is becoming more and more essential. Electronic safe locks are here to stay as well as CCTV and card access systems.

Based on that answer, Tom, what do you feel it's going to take if for a locksmith to remain competitive and successful?

The locksmith is going to have to make investments in tools required to do service procedures. The days of using makeshift tools are coming to an abrupt halt. He/she will also have to make continuing efforts to attend training seminars on a regular basis. Education is the most important thing to achieve, for the veteran locksmith as well as the beginner. Remember, with today's new technologies we're all beginners at some point!



Thomas A. Mazzone

With the emerging technology and focus on security, Tom, what do think will be the future role of the locksmith?

This field is an excellent field to continue in. Unfortunately, crime is on the rise in major cities as well as small towns and suburbs. This means that trained people are needed to fill those positions as security specialists. You are only as limited as you allow yourself to be. If you specialize in a particular area, know all you can about it and business will seek you out.

From your perspective, do you have any suggestions on how a locksmith can better serve his/her customer?

As with any business, having a good stock of merchandise and offering quick and dependable service will bring you repeat customers. Developing a reputation for honesty and competitive pricing is a matter of one's conscience but will yield great profits in today's market where shoddy workmanship and scams have become common place.

Thank you, Tom. Before we close, do you have any last comments?

I can't stress networking with other locksmiths enough. No one knows all about all areas of locksmithing. It really is enjoyable to meet with fellow locksmiths and share information. Joining a local locksmith association or ALOA may be one of the smartest things a locksmith can do for himself. Share your knowledge so others will share with you.

TNL



HPC is proud to announce the **8th** winner in their monthly Codemax™ drawing. HPC has awarded a Codemax™ computerized key machine to **Ernest Wyld of Ernest Wyld Locksmithing in Livermore, California** on **October 1st**. It was purchased through **R & H Wholesale in San Francisco, California**. HPC will be awarding a Codemax™ to a lucky locksmith every month through February 1996. To qualify, locksmiths simply need to purchase any 1200 Series Key Machine and send in their registration card along with a copy of their distributor invoice to HPC. Once this is done, they will automatically be entered in the contest. Entries will remain eligible until the conclusion of the contest. A total of over \$47,000 will be awarded. There are still **four** more chances to win.

Security Lock Distributors has completed stocking both its Massachusetts and Florida warehouses with the newest products in the Arrow line; in every function, finish and style. **Arrow** products include alarmed hardware, exit devices, closers and accessories, in addition to cylindrical, mortise, lever,



entrance and IC hardware. All can be delivered overnight.

Sharon Lause celebrates five years of working for **JLM Wholesale**. Sharon is a member of JLM's sales staff taking orders and helping customers with questions and applications.



Schwab Corp. was recently presented with a **1994 Diebold Supplier Award**. This marked the third time Schwab has won the award.



Now in stock at **Acme Security, Security Door Controls** the new 1500 Series of Epoxyless EmLocks. All of the 1500 Series locks offer patented all steel magnetic core construction, dual voltage, 12VDC or 24VDC, and complete modular design. The 1511 offers a holding force of 1650 pounds for high security



applications, while the 1571 offers 1200 pounds of holding force for medium security applications, and the 1585 has 650 pounds of holding force for traffic control situations.

International Electronics, Inc. (IEI) announced today that it has hired **Robert DeMoss** as its **Regional Sales Manager** for Metro New York and the Mid-Atlantic. Mr. DeMoss has several years experience in the security industry, most recently as a factory rep in the access control market. His territory will include Metro NY and NJ, Eastern PA (Philly) and MD, Washington DC, DE and VA.

Door Controls International has announced the appointment of **Combs & Associates** as manufacturers representatives in Minnesota, North and South Dakota, and western Wisconsin. They can be reached at: Combs & Associates, Inc., 531 Larpenteur Avenue East, Maplewood, MN 55117. Phone: 612-771-4700 Fax: 612-771-0434. TNL

The LIGHTER Side

"Capping It Off"



by
Sara
Probasco

"Don't you think it's about time to retire that hat?" I asked.

Removing his brightly flowered Gadsby-style cap, Don looked at it appraisingly. "What's wrong with it?"

"For one thing, it looks as if it's been dragged in the mud."

"All I see is a little graphite on the brim."

"A little! If I didn't know better, I would think you had worn it to a Mt. Saint Helen eruption party."

"It's not that old."

"It's that grungy! Here," I said, reaching for it. "At least let me wash it."

"Oh, no you don't! The last time you did something like that, we had to perform last rites, and it took weeks to find me another one. You leave my cap alone. I like it just the way it is."

"Maybe we ought to hold a Funny Cap Contest and see if we can come up with some interesting new headgear for you."

"No way! People would just send me the wrong kind — a baseball cap, or some drab, conservative color — then none of my customers would recognize me."

"I can't believe the cap style or fabric is that important to your image," I scoffed. "In fact, I sometimes wonder if the cap is necessary, at all."

"Don't you remember when I became a Certified Master Locksmith and the local newspaper published an article about me? I wasn't wearing my hat in the picture, and several customers thought the newspaper had put in the wrong fellow's picture."

"Well, I still say a cap contest might be interesting. Remember the flat-cap someone sent you from the British Isles?"

"The checkered wool? That was nice."

"I liked it, too. You look like a Scottish gentlemen in it."

"My favorite was the koala cap from Australia."

"You're kidding."

"No. It was so cute, with its little beady eyes peering down from the bill — almost as cute as the skunk-skin cap my cousin Fred made a couple of years ago," Don grumbled.

"Don't you mean a raccoon-skin cap?" I asked.

"Nope. Road-kill skunk, with all the fragrance that term implies."

"I don't believe you've told me about that," I said.

"Fred was a bit strange. I guess that's why the rest of us tried to shy clear of him when we were growing up. Somebody was always getting into trouble over one or another of his antics."

"For some bizarre reason, Fred decided he wanted to make a skunk-skin cap. The particular night in question, he was driving his wife's new car, so when he found his prize, he decided to toss it into the trunk rather than stink up Dolores's upholstery. By the time he got home,



Okay, folks, find a mate to this cap and you've won yourself a free Service With A Smile! by Sara. Don, posing for camera, gives us a side and front view of his hat.

you could have smelled him a mile away."

"I'm sure the trunk reeked with essence of Pepe la Peu for months!" I said. "How awful!"

"Oh, that wasn't the worst of it." By now, Don was laughing so hard he had to wipe tears from his eyes. "In all the excitement, Fred somehow managed to lose his trunk key. Stubborn as he is, it was a couple of days before he gave up trying to get in and called me to open it for him."

"My word! It's a wonder the Dolores ever got the stink out of her car."

"I heard it took her three scrub brushes and a couple gallons of tomato juice," Don chortled.

"I'll bet she was ready to kill Fred."

"Well, let's just say it was a long time after that before he felt easy about falling asleep in her presence."

"At any rate, I guess that cured him of collecting dead skunks."

Don had a funny expression on his face.

"He disposed of it, right?" I asked.

Don shook his head. "Not exactly.

Ol' Fred soaked the carcass in formaldehyde for months, trying to eliminate the smell. Finally, he made a Daniel Boone cap from the hide, anyway."

"And he actually wears it?"

Don nodded, laughing. "One thing about it, though," he added. "I always know when Fred's coming in time to go the other way."

*****HEY, READERS! HELP PRESERVE A LEGEND IN YOUR OWN TIME!*****

Don really does need some new caps, and we're having no luck finding any wild-printed ones in his style, around here.

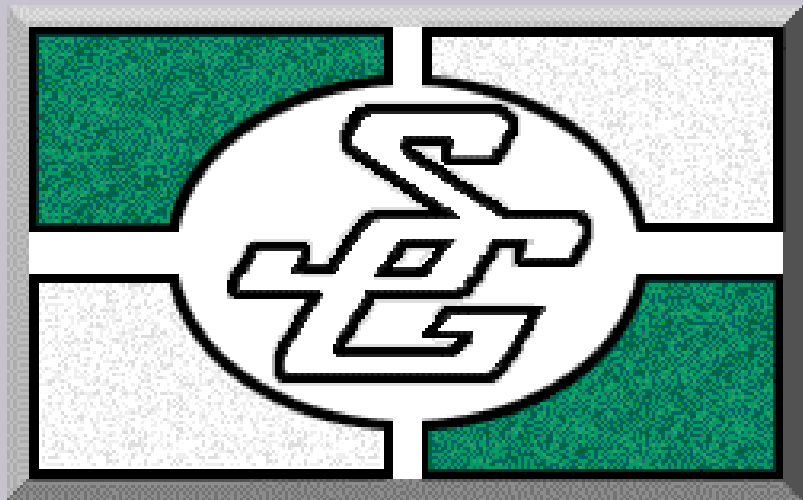
His trademark is the flat-cap or Gadsby-style cap in bright colored, wild floral prints. This is not a baseball-style cap. He wears size 7-1/4, in case it's not adjustable. (See photograph)

If you know where we can buy caps like this, reasonably priced (when I bought one a couple of years ago, it cost less than five dollars) please forward source information to me c/o

The National Locksmith, or send two or three caps (No road-kill caps, please!), along with the sales receipt and postage costs, and I'll gladly reimburse you.

ALSO, to the person sending the best cap before February 1, 1996 (or information leading to the best), I'll send a free, autographed copy of my book, *Service With a Smile!*

Thanks for helping to preserve the legend! **NL**



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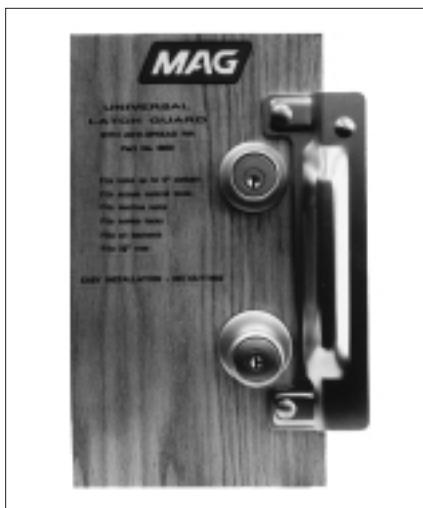


ACCESSORY LOCKS

Keys and deadbolts, probably the two most common products associated with locksmiths. Still, while they may be the bread and butter for many shops, nothing challenges the locksmith more than specialty applications requiring accessory locks. So, to help make that mate of lock and application, here's a supply of manufacturers their products and the applications they fit.

Winner International

The Door Club provides a higher degree of home security than conventional chain and deadbolt locks. The "open" position allows the door to open 2" for identifying visitors.



SAY IT WITH ACCESSORIES



for those computers that do not have the built-in security feature. For more information contact Qualtec Data Products at (510) 490-8911.

MAG Engineering

The #8850 universal latch guard for out-opening doors accommodates all locks, all backsets, locks up to 6" on centers, access control locks, mortise locks, combination locks, 3-1/2" diameter rose, and allows for easy installation without cutting due to the through-bolts not interfering with the doorstop. Available in brass, chrome, and duronodic finishes. For more

information contact MAG at (714) 891-5100.

Multi-Lock

The Multi-Lock file cabinet bar features the "Multi-point" locking system which allows easy installation and ease of adjusting to most all file cabinet configurations. The spring loaded opening system allows for easy opening and quick clearance to adjacent file cabinets that are locked or unlocked.



For more information contact Winner International at (800) 258-2321.

Qualtec

The LOK-KIT II secures not only computer, but copiers, printers, faxes and more. Three heavy duty cast metal plates with vinyl surfaces attach to your equipment with out "Super Bond" adhesive. Our NOTEBOOK-KIT is the most complete theft deterrent kit for "mobile" computers. This kit includes both a removable "Micro-Clip" that utilizes the small security retention socket built into many systems plus a Super Bond plate



Multi-Lock Bars exceed the Department Of Defense Industrial Security Manual for safeguarding classified information and are available in one to five drawer sizes.



Multi-Lock file cabinet locking bars are marketed by the Abus Lock U.S.A. Co. Woburn, MA For additional information call (800) 225-5348.

Major Manufacturing

The 5002 series Octopod by Major Manufacturing is a surface mounted deadbolt that can be mounted on a door rail as narrow as 1-5/8". This makes the Octopod ideal for locking sliding aluminum doors, windows, French doors and more. Octopod will accept most 1-1/8" mortise cylinders to make it versatile when keying to other locks in a system. For more information contact Major Mfg. at (714) 772-5202.



Abus

Abus Lock U.S.A. recently added the German made Abus Carblock steering wheel locking device to the U.S. line. Unlike the popular models now marketed in the U.S. which offer little resistance to Freon R. and boltcutter attack, the Carblock is constructed of hardened steel alloy

and features the Abus plus key cylinder which is drill, picking, and Freon R. protected. Key control is available.

The Carblock has a double locking loop which surrounds the steering wheel and stem in two locations. This configuration forces the thief to cut the steering wheel in three locations, making it impractical to drive thereafter.

The Carblock is currently used in Great Britain to protect new Jaguars after the manufacturing process. The Carblock is available through Fried Brothers Distributors, Philadelphia, PA (215) 627-3205.

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Introducing SOLEX® High Security car and truck locks. Now you have the answer for your customers



who are searching for a way to end vandalized door and trunk locks. SOLEX® now brings the security of tubular design lock and key to OEM automotive applications. Available for most imports. For more information contact Orion Pacific Trading Co. at (714) 830-2003.

Master Lock Door Security Bars

Master Lock's Door Security Bars are value-added security products that meet homeowner's needs for improved protection.



The Door Security Bar fits under the door knob and helps prevent intruders from forcing an entry door open. Master Lock's patented locking system can withstand more than 1,000 pounds of force.

For more information about Master Lock door hardware, write to Master Lock Company, P.O. Box 10367, Milwaukee, WI 53210.

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Police, Fire, Neighborhood Watch approved - UL submitted. Distributorships available. For more information contact LOCKINBAR® (800) 661-0621.

Cor-Tech

The patented Cor-Tech patio door lock can be pushed into the locked position or opened with just one hand. In the locked position, with a simple push of the button, individuals can open a door to its 4" opening to let in fresh air or let pets in or out without




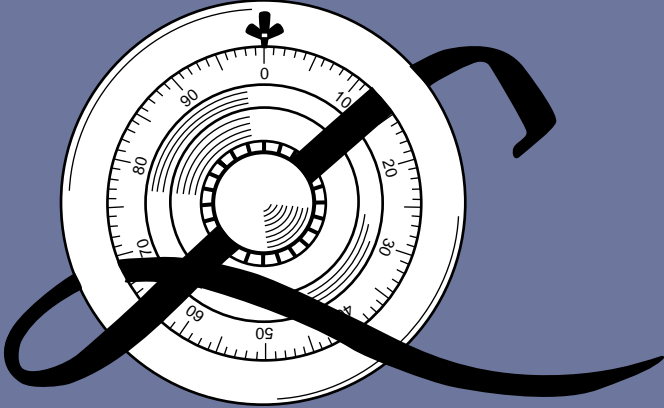
unlocking the door. In the open position, the locking bar folds away to its mounting, allowing the patio door to open and close normally to within 3" of the door frame. The lock adjusts to fit all standard doors, is easy for a child to use and is handicap accessible. Cor-Tech locks are available in coordinator colors from Cor-Tech Manufacturing, Inc. For more information contact Cor-Tech at (507) 283-9081.

Kryptonite

Kryptonite, best-known for its high quality bicycle U-locks, offers a complete selection of light, medium, and heavy weight cable locks providing versatile options for locking accessory items around home or on the job. The Resettable Combination is a hefty coiled cable with integrated



resettable combination lock. Kryptonite's new Kryptocable V is a straight braided steel cable with swivel-action Lexan™ head, while it's sister, Kryptocable IV, offers the same features with self-coiling cable for easy storage. The KryptoFlex Cable and New York Chain locks provide unlimited use possibilities for low and high security applications. These two lock styles range in length from three to seven feet, and both can be secured with an EV padlock, a mighty, mini U-lock which will stand-up to a thief's tools. For more information contact Kryptonite at (617) 828-6655. 



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WHAT DO YOU WANT TO SEE IN THIS MAGAZINE?

Is there anything that you'd like to see more of/less of?

Write the editor:

The National Locksmith, 1533 Burgundy Pkwy., Streamwood, IL 60107
natlock@aol.com.



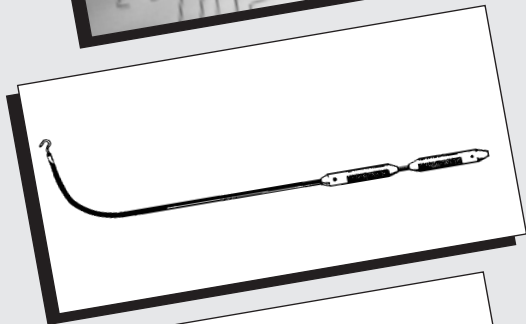
Those Incredible Car Opening Tools

Car opening tools and car opening manuals are a necessary part of today's locksmith. Unlike 20 years ago, coat hangers and flat steel opening tools won't work. So, whether you swear by them or swear at them, the opening tools, the manuals and their manufacturers are here to stay. Following is a list of those manufacturers and their products that make our life a little bit easier and a little more profitable.



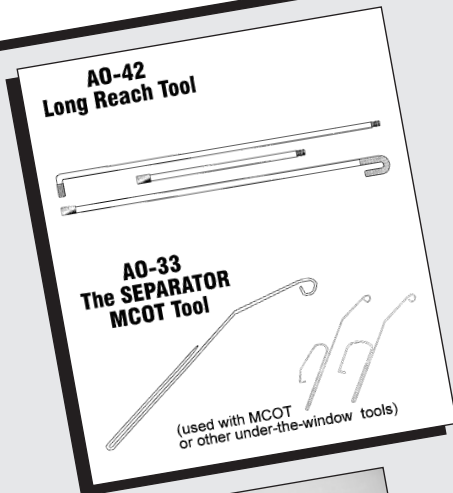
High Tech

The High Tech tools Model 2300 is the most complete up to date auto lock-out set available. The 2300 comes complete with 27 tools, a 4 volume 1700 page Encyclopedia, Wedge system and instructional video. Auto openings are covered in the two field volumes with clear precise illustrations, simple instructions, and step by step photo instructions. The information volume covers space and depth, key blank numbers, lock part numbers, labor time guide and more. The instruction volume covers lock ignition lock replacement, V.A.T.S. system, air bag system, MATS etc. For more information call High Tech Tools at (800) 323-8324.



HPC

HPC introduces two new revolutionary car opening tools! The new Clutch™ Car Openers are unlike any others on the market. When the handles of the tool are separated, the hook at the end of the tool is pulled inward, causing the tool to grip or bind the linkage rod. This new type of car entry tool will simplify the "in-the-door" method of vehicle entry. Two different styles are available: The Vertical Clutch™ for vehicles with vertical linkage and the Horizontal Clutch™ for vehicles with horizontal linkage. Contact your Authorized HPC Distributor for more information.



Pro-Lok

Pro-Lok has added two new tools to it's lineup of lockout equipment.

The AO-42 Long Reach Tool is a three piece tool designed to reach across the car to retrieve keys in the ignition or unlock the opposite door. The two end sections have rubber protective tips. The tool can be used as two-section tool with an effective reach of 48" or by combining all three sections, the tool has a 75' range.

The AO33 "Separator" MCOT is the latest weapon to add to your lockout arsenal. This tool is used with any brand of Under-The-Window tool to get into a variety new cars where the door panel deflector flange is used. The flange prevents an MCOT or other similar tool from entering. The AO33 is used first, bypassing the flange and separating the inner door panel from the glass, holding it away slightly. Then the MCOT tool can be brought up inside to unlock the car. Contact a Pro-Lok distributor for more information.



Slide Lock Tool Company, Inc.

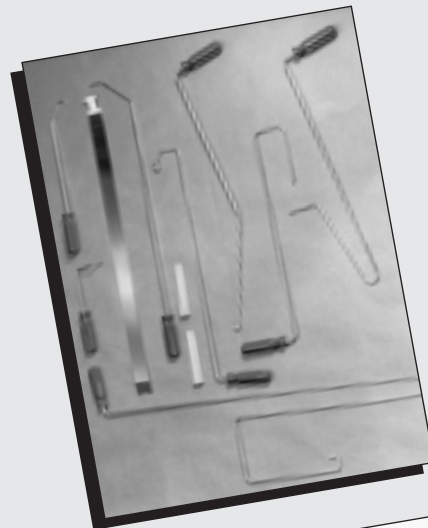
The 1995 Grand Master Z-Tool® System, a high performance automotive lockout system, contains all locksmith quality tooling in stainless steel. Complete with hard shell carry case, night work, hands free head lamp and the recently released 1995 7th Edition System Manual. Complete set covers all model years from the 1950's right up to the newest showroom models.

A free call gets you a free full color technical catalog demonstrating all of the tools in use. For more information contact Slide Lock Tool Company, Inc., 1166 Topside Rd. Louisville, TN 37777, (800) 336-8812 or (615) 577-8470.

Steck

This is a quality set of tempered steel tools designed to unlock over 95 percent of the cars on today's highways quickly and without damage. This kit unlocks Domestic, Japanese and European model cars, trucks and vans. All tools are carefully deburred to prevent scratches. The kit comes in a flexible plastic storage pouch to keep your tools together.

For more information contact Steck Manufacturing Co., Inc., 1115 So. Broadway, Dayton, OH 45408, (800) 227-8325, FAX (513) 222-6666.



Tech-Train

The company specializes in education videos and tools exclusively for locksmiths. They offer a full line of auto opening tools with an illustrated manual covering over 500 vehicles. Tech-Train disassembles new vehicles annually, producing a car opening video showing how to open each vehicle with views from inside the door. For more information contact Tech-Train at (904) 476-7197.

TNL

CAR OPENING TOOLS



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TECHNITIPS

Helpful hints from fellow locksmiths

Send in your
tips and win.

HOW TO ENTER

Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: *Jake Jakubowski, Technitips Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107 or send your tips via E-mail to the E-mail address posted in the upper right hand corner of this page.* Remember, tips submitted to other industry publications will not be eligible. So get busy and send in your tips today. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1995? Enter today! It's easier than you think.



by
Jake Jakubowski

BEST TIP OF THE MONTH

If your tip is chosen as the best tip of the month, not only do you win the All-Lock Foreign Auto Service Kits, but you also automatically qualify to win one of the many excellent year end prizes!

EVERY TIP PUBLISHED WINS

Yes, every tip published wins a prize. If your tip is printed, you'll win \$25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from *The National Locksmith*. Plus, every tip published will win a copy of the Technitip Handbook. (Please remember to include your complete mailing address - we cannot mail prizes to P.O. Boxes.)

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Internet: natllock@aol.com

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- Pro-Lok PK15 Professional Lock Pick Set
- Sieveking Products EZ-Pull GM Wheel Puller
- A-1 Security Mfg. Quickpull
- Major Mfg. CAK Cylinder Access Kit

Hey, y'all! It's almost time to select the year-end prize winners! I'll be publish- in' that list in the January issue of this column! Don'cha' dare miss it, now! And, I want to thank each of y'all that took the time to send me your ideas and tips.

I also want to thank the folks who contribute all them neat prizes. Y'all probably wouldn't be keepin' my mailbox full of tips, tricks and ideahs! So, what I want to do is thank each of our prize contributors - raht here, raht now! By contributing prizes to The National Locksmith's Technitip column, they're creatin' an interest in those products, tools and equipment that makes our job easier. It would really be great if y'all could drop 'em a line too, an' tell 'em how much y'all 'preciate their contributions and effort.

All-Lock Co., Inc., 900 Ravenwood Dr., Selma, AL 36701 for their continued support, contributions and their willingness, over the years, to share their products with the winners in this column every month. There are an awful lot of locksmiths out there that have a VATS decoder that they won through All-Lock's generosity.

STRATTEC SECURITY Corporation, P. O. Box 702, Milwaukee, WI 53209 became a monthly prize contributor to this

column just this year, but it won't be long before a whole bunch of my tipsters will be wearing some sharp looking STRATTEC jackets. Did y'all know that STRATTEC (formerly Briggs & Stratton) originally made an automobile before they became an OEM supplier to the automotive industry?

American Lock & Supply, Inc., 4411 E. LaPalma Ave., Anaheim, CA 92807. When I spoke to them about becoming a prize contributor, they immediately agreed to get in the game with a \$50 merchandise certificate each month! That monthly prize is going to give a lot of locksmiths an opportunity to sample American's merchandise over the next year!

HPC, Inc., 3999 N. 25th Ave. Schiller Park, IL 60176 manufactures more locksmith tools and equipment then you can shake a stick at. For a whole lot of years they have provided monthly prizes to this column but they have also, over the years, provided dozens of key machines to lucky year-end prize winners! It's hard to beat loyalty and support like that.

Sargent & Greenleaf, Inc., One Security Drive, Nicholasville KY 40356 is a familiar name to every locksmith that has been anywhere near a safe in the last umpteen years! And, now, S&G in a

continuing effort to not only provide locksmiths with top quality products, is going to help some of my tipsters experience that quality first hand by giving away a 4400 series safe deposit box lock to one of my winners every month!

Silca Keys, USA, Inc., 9049 Dutton Dr., Twinsburg, OH 44087. I have no idea how many hundreds of rubber-headed Silca keyblanks have been given away as monthly prizes to Technitip winners in this column. But, I can tell you this: It's been bunches. Not only has Silca contributed 100 rubber headed keyblanks as prizes - each month, they also provide year-end prizes too. This year, Silca is giving away a Silca MATRIX in our year-end drawing!

Pro-Lock, 1060 N. Batavia, Suite C, Orange CA 92667 has helped a lot of my Technitip winners sharpen their picking skills with their PK-15 Professional Lock Pick Set. Pro-Lock is another company that is dedicated to putting professional quality tools in the hands of professionals!

Sieveking Products Co., P.O. Box 4287, Rockford, IL 61110. Sieveking Products has been giving away one of their E-Z Pull GM Wheel Pullers every month for as long as I can remember. And, if y'all remember: Bob Sieveking edited this column for nearly ten years and

I want y'all to know - he's a hard act to follow!

A-1 Security Manufacturing Corporation, 3528 Maryland Ct., Richmond, VA 23233 manufacturers over 100 locksmith tools and machines and joined the list of Technitip prize contributors this year by providing an A-1 Quick Pull Tool as a prize to one of my winners each month!

Major Manufacturing, Inc., P. O. Box 788, Atwood, CA 92601 markets a lot of tools and products to make the locksmiths job easier. They have generously provided their Safe Hinge kits, Cylinder Guard kits and other products as monthly prizes to be awarded to winners in this column.

And ... I didn't even get around to mentionin' the folks who are givin' away some really neat stuff as year-end prizes. I'll see if I can't get to them next month.

To each one of my prize providers, I say "Thanks!"

To my Technitip tipsters, I say: "If y'all can't say thanks in a note to these folks, then say thanks by buying and using their products. After all, they are generous in their support of your Technitip column - whenever possible, we should support them". Y'all heah what I'm sayin' now?

All-Lock Foreign Auto Service Kit Winner

Rubber Bumper Door Opening

The other night I was called to an Office Park to let a tenant in their office. The key would turn the plug but the knob would not move and the latch did not retract. I felt the problem was either a jammed latch retraction unit, the latch had disengaged from the retractor mechanism or, the deadlatch bolt was jammed behind the lip of the strike preventing the latch from retracting. This method also works well on doors with high security cylinders that cannot be picked.

In this case it was the latch and deadlatch bolt being caught behind the lip of the strike as shown in illustration one.

As in similar situations, when I tried to move the door, there was no play in the door at all. In many doors this is because of small rubber

cushions or bumpers that are build into the door stop that are known as silencers. These silencers are found on many commercial wood and steel doors on the latch side. When you encounter this type of lock-out, the door has often been slammed hard enough to compress the bumper sufficiently to allow the entire latch, including the deadlatch, to become trapped behind the strike. The binding on the deadlatch makes it just about impossible to retract the latch when turning the knob, lever, or lock cylinder.

In this case, I simply used a sharp, thin bladed pocket knife to cut the silencers and pulled them from between the door and the door stop. This gives me about 1/8" to 1/4" of play between the door and the door stop, relieves all the pressure on the latch, and allows it to retract properly.

In cases where the retractor malfunctioned or the latch and

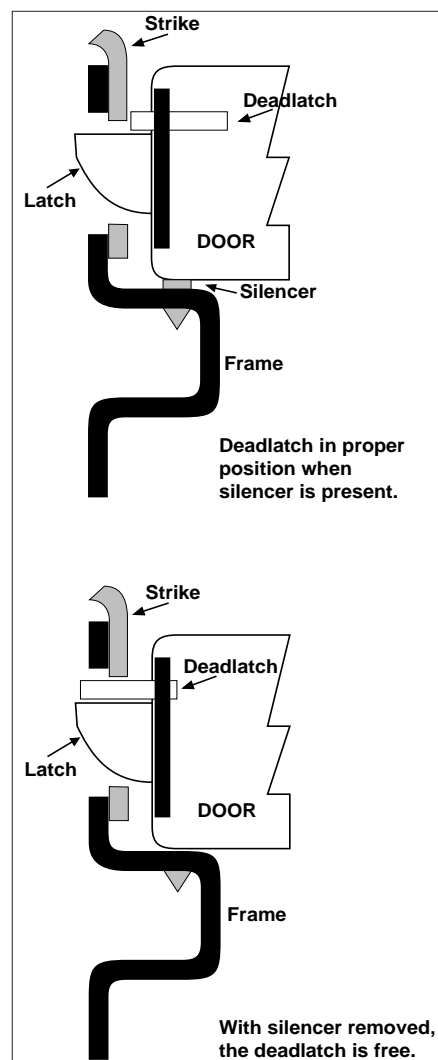


Illustration 1

retractor became separated, removing the silencers creates enough room for the door to be pulled, allowing the deadlatch to fall into the strike area. This, of course, releases the deadlatch function and I can now use a Lemon Pop, credit card or other thin rigid material to loid the latch to the open position. (see illustration 1)

Once I've gained entry, I can repair the lock (if necessary) adjust the strike and replace the silencers. Replacement silencers are available from most door and hardware distributors.

Al Zaniolo
Illinois

*Strattec Pinning Kit
And Jacket Winner*

Expanding HPC Punch Machine

After reading your article on the HPC 1200 Punch Machine (See *The National Locksmith*, May, 1995, page 39), I decided to order one. After it arrived, I began looking for ways to utilize the HPC 1200 as the only code

machine that I would need on my van.

As stated in your article, true paracentric keys can't be punched on the 1200 due to key blank distortion. However, I found that if you need to generate a first key by code, simply punch out a key on an acceptable blank and duplicate that onto the proper blank.

For instance: You need a key for a Sargent "R" sectional keyway. Use a Jet DE8 (or equivalent), insert it from the left, use Jaw "A" and punch 1011. Using either the micrometer card or a card that you have made, punch out the key using Sargent depth and spaces. Now, just duplicate your guide key onto the proper blank.

I think that HPC should consider the possibility of developing a special key blank just for this purpose. It could greatly enhance the capabilities of their 1200 Punch Machine, which I think is just as great as you said it was in your article, Jake.

Jerry Weldin, CRL, RST
Kentucky

American Lock & Supply Winner

Schlage Lever Template

I'm employed by the Harlingen School District. About a year ago the old high school was remodeled and the contractor installed Schlage "D" series leversets throughout the campus.

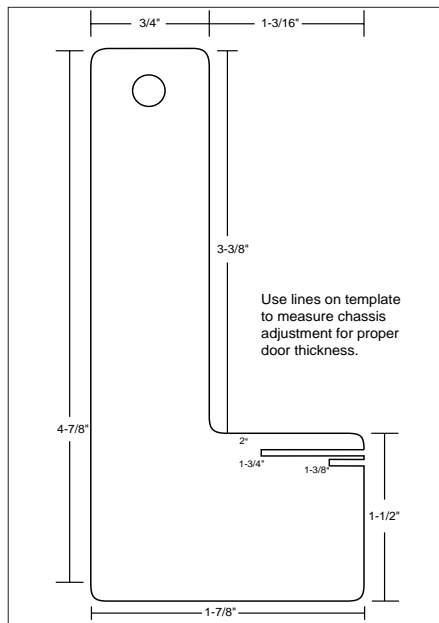


Illustration 2

Soon after school opened for the year, we began having chronic problems with people getting locked in the rooms. It turned out the problem was caused by an improper adjustment of the locks. They were not set for a 1-3/4" door thickness, causing the lock body to disengage

from the latch mechanism.

We had about a hundred of these locks to refit to the doors and only had a few of the paper templates that come with the locks to work with. Of course it didn't take long for those templates to become unusable.

Illustration two shows an aluminum template that I made to speed up the re-adjusting of those 100 locks to fit a 1-3/4" door. I now keep this gauge and the Schlage bushing wrench held together in my toolbox with a key ring, ready for the next quick adjustment I have to make.

Sr. Gonzalez
Texas

HPC Pistol Pick Winner

Tubular Lock Bypassing

Tubular locks like Ace and Greenwald often cannot be opened by picking because of a malfunction in the lock. When I encounter one of these locks, here is how I open it.

I use my die grinder to grind off the face of the lock. Then use my shop vac to clean out the debris from the springs and pins that are in the cylinder. Then I use an uncut tubular key or a pair of needle nose pliers to turn the plug.

If you do not have a proper blank, you can use a Dremel tool to cut a slot

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in the nose of the lock into which you can insert a screwdriver to turn the plug. I find that a little brake drum cleaner or WD-40 sprayed into the lock helps this to work a little better.

John M. George, CML
California

*S&G 4440 Safe Deposit
Box Lock Winner*

Cam Lock Rekey

I was on a job that called for rekeying a cam lock to get it on the same key as other locks in the store. The odd lock was the same type as the others in the system and had the same keyway. The problem was that I did not have any wafers that would fit the lock that needed to be rekeyed.

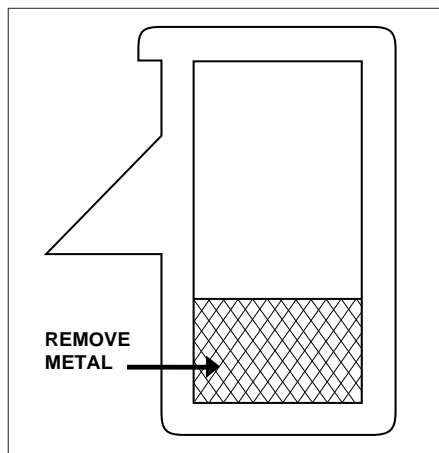


Illustration 3

It so happened that all but one wafer could be arranged to match the store manager's key. Fortunately, the odd wafer was high enough (a number five) to allow me to remove metal from the inside area of the wafer which turned a number five wafer into a number two wafer. (See illustration 3.)

Larry Wright
South Carolina

*Silca Rubber Headed Key Blanks
Winner*

Tack Hammer Facecap Installation

When replacing the face caps on GM or Ford 10-cut door locks, slide the cap onto a flat ended punch or piece of rod. Place the spring(s) and shutter into place and pushing down on the shutter with the flat punch or rod, slide the face cap over the shutter, etc.

Now, hold the assembly together with your thumb and index finger and set the punch or rod aside. Place the cylinder on your work bench with the face cap and shutter, etc. facing down. Now, just bend the tabs over and your job is done.

To help ease the bending of the tabs, I bought an upholsters tack hammer and removed one prong with a hacksaw. (The head of this hammer is split in half and is magnetized for picking up tacks. The tip is to remove one side of the hammer head.) Holding the cylinder tightly down on my workbench, all I do is hit the tab with the hammer's prong and bend it over.

If you decide to use my tack hammer approach to bending the face cap tabs, you want to cut off the right side prong (with the prongs pointing downward) if you're right-handed. If your left-handed, cut off the left prong.

Steve Stanhope
Texas

*Pro-Lok PK-15 Professional Pick Set
Winner*

Run Like A Deere

When I was called to assist the owner of John Deere equipment, I found that I did not have a "Deere" blank with a deer emblem on it. What I did have was an RA-4 which fits the old American Motors vehicles.

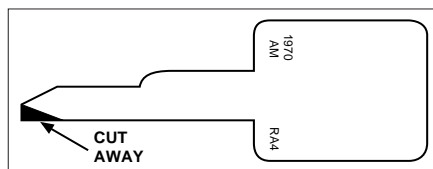


Illustration 4

I had to modify the blank as you can see in illustration four to make it work in the Deere, but now the Deere runs like a Deere should - even without the deer emblem!

Len Wagner
Illinois

*Sieveking EZ-Pull GM Wheel Puller
Winner*

Ford Facecap Fix

I'm certain that anyone who does automotive work has come across a Ford 10-Cut ignition lock with a loose facecap. Here's a quick, economical way to solve this problem for your customer that I have been using ever since this ignition made it's debut in the market-place.

First, straighten the cap and use the customers key to turn the ignition to it's removal position and remove the ignition cylinder from the housing. Next, insert an uncut blank into the cylinder and place the key and cylinder upside down (use Vise-Grip pliers or a vise to hold the cylinder steady).

Now use Super Glue around the back edge of the face cap to spot weld the facecap to the cylinder. Of course, you have to be careful that you do not get glue anywhere but on the back edge of the facecap and the edge of the cylinder that the face cap is swaged to.

Avon Aiken
Florida

A-1 Security Mfg. Quick Pull Winner

Muffin Tin Order

Buy several muffin tins and mark a number on each hole. Then, when you disassemble an unfamiliar lock, put the pieces in the tins in the order you remove them from the lock.

To reassemble the lock, simply reverse the order and you will not forget any pieces.

This technique can save time (even on familiar work) and it prevents screw and pins from rolling off the bench. If your work is interrupted by a priority job, you can move the tins to a shelf and your bench is clear for action!

Jeff Boone
Missouri

Major Manufacturing Winner

Bargman Lock Wafer

I do a lot of work on Bargman RV locks and when the wafers have been damaged, but the plug is intact, there has been no immediate answer short of replacing the entire cylinder.

After a lot of experimentation, I found that for the L-300 lock using the IN25 (K1122B) keyway, you can use the wafers from the Auto-Security Products A-16-104 keying kit for Datsun and Subaru.

Larry Kanzer
Pennsylvania

Jake's Grab Bag Winners

Key Extractor

If you have an old Dot Matrix Printer that is ready for the junk pile, remove the printing head and you will find a number of small wires with plastic tips that did the printing. Use a pair of needle-nosed pliers and bend the end to make a hook about 1/8" in size

This little instrument can fit into a very small area and when you pull on the plastic end, it will bite into the broken key and remove it easily since the wire used on these printers is very strong.

Robert Riggan
Virginia

BITS & PIECES

Informative Tidbits for the Security Industry

Well, we've got a few tidbits for you this month. From our Technical Editor, Jake Jakubowski, we have the following:



by
Tom Seroogy

Many of our readers have been running into and asking questions about the Atrium Door lock. This is a French style door with a narrow stile and sporting a lock that includes a profile cylinder.

To obtain original parts, locksmiths can contact Atrium Door Company at 9001 Ambassador Rd., Dallas, TX 75247. Phone (214) 634-9663. The part number for the entire lockset is N6LH (includes cylinder) at a cost of approximately \$85 to \$90. For a profile cylinder only, the part number is N6KI.

Lori Lock also makes replacement cylinders that can be obtained through an authorized Lori distributor. Part numbers for the Lori profile cylinder are: 5300 (double cylinder) and 5301 (single cylinder).

Another source for a replacement lock is Ultra Hardware. They have a lever replacement with a 1-3/4" backset that retrofits the Atrium lock. The part number is 44625 and it cost approximately \$60. For an Ultra catalog, contact Ultra at 1777 Hylton Rd., Pennsauken, NJ 08110. Phone (800) 858-7210.

Thanks, Jake!

Curtis Industries has both keys and new cam and carriage for the new Ford 8-Cut available. Keys are available in both standard and PATS versions. For the 15 cutter, the Ford 5 cam and Ford 5 carriage are used.

The new 8-Cut system is employed on many of the new model Fords. The PATS 8-Cut is starting as an option on the '96 Taurus/Sable. A 10-Cut PATS version is available on the Mustang.

These keys are also available from Curtis.

Also, the 1995-1/2 Isuzu Rodeo and Honda Passport are using a different code series and key blank. Previously these vehicles used the D4001-6000 code series using a B74 key blank. The new models use the N5001-7000 code series and the B65 key blank. This series and blank have been in use on the 1989 and up Isuzu pick up. For information, contact Curtis at (800) 555-5397, or fax (800) 867-6020.

Just recently received a copy of an article that appeared on page 91 of the June 1995 Security Distributing & Marketing (SDM). The article was written by Lessing E. Gold of Mitchell, Silberberg & Knupp, Los Angeles, and who serves as legal counsel for the National Fire & Burglar Alarm Association.

In the article, Gold covers an Illinois court case involving a former police officer who was seeking his alarm contractor's license. As Illinois law required an applicant for licensure to have of a "minimum of three years experience out of the five years immediately preceding their application as a full-time supervisor, manager or administrator for an agency licensed in the State of Illinois as a private alarm contractor agency," the Illinois Department of Professional regulation denied the former officer a license.

According to Gold, the lower courts upheld the denial. However, the Illinois Supreme court found in favor of the officer, citing that the police officer's application indicated that he had received the training required by the Act, and that the Alarm Act for licensure failed a two-part test for determining the constitutionality for an apprenticeship provision.

For qualified Illinois locksmiths, this removes a major obstacle for those wishing to enter the alarm industry.

Some new Quickchange kits for the A-1 Pak-A-Punch™ have just recently been released. They are - the PAK-VOK for Volkswagen covering the AH, AN, HV, N, NV, VB (1-9282) and FB1-210 code series. The PAK-F2 for the Ford Aspire (this kit requires the PKS-88T accessory punch) covering the B1001-2200. The PAK-F3 the the new Ford 8-Cut (with and W/O PATS) covering the 0000X-1706X series. And the PK3-CV2 for the standard Kwikset key.

Also from A-1 is a new accessory tension tool. This tool is designed as an accessory to the PS2 GM 10-Cut pick set that A-1 just recently developed. Used to defeat the new "Top Hat" 10-Cut ignitions introduced on the 1996 GM N and J Body vehicles. After dropping the lower shroud, this tool allows the lock to be picked without damage. Cost of the tool is less than \$10. For more information, contact an authorized A-1 distributor, or call A-1 at (804) 747-0534.

Distributors, manufacturers and locksmiths - looking to get the most out of Uncle Sam at the end of this year! From the National Association for the Exchange of Industrial Resources, we have the following: "New excess inventory of alarms, locks, and related security products can earn a federal income tax deduction, when donated to a qualified charity. Regular (C) corporations may deduct the cost of the inventory donated, plus half the difference between cost and fair market value. Deductions may be up to twice the cost. S corporations, partnerships, and sole proprietorships earn a straight cost deduction." To qualify, donations must be made to a 501(C)3 organization. For more information contact NAEIR at (800) 562-0955, or fax (309) 343-0862.

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HOME SECURITY AND THREAT ASSESSMENT

Assessing the degree of threat to crime a household has is part of completing a home survey.



by
James M. Coleman

A home security checklist is a good tool to assist in conducting a home security survey and is a reminder of many of the security measures which should be addressed. Before conducting a

survey, you should be sure the homeowner or principal occupants are available during the time the survey is scheduled to be conducted. They provide critical information to you and they should be there when you make your recommendations. It is desirable to conduct the survey at a time that is convenient to the occupants and not when they are rushing off to work or taking the children to school. You should plan at least an hour to conduct the survey. Many times it is necessary to schedule a survey on weekends or after their normal work hours.

Threat Assessment

The first step in conducting a good survey is to perform a threat assessment. A professional security officer always considers the level of threat before making any recommendations. Many times the threat assessment can be made in your head based on your knowledge of the area, crime situation, or by information provided by the home occupants. It may also be necessary to

follow your local newspaper, visit the local police precinct to obtain crime statistics, and it never hurts to talk to the cop on the beat.

When you drive through the neighborhood and you see that most of the homes have grills or alarm systems, it is a good indication that the crime rate may be high. The goal of home security is to make forced entry into a home difficult to the point that the burglars will go to another home in the neighborhood.

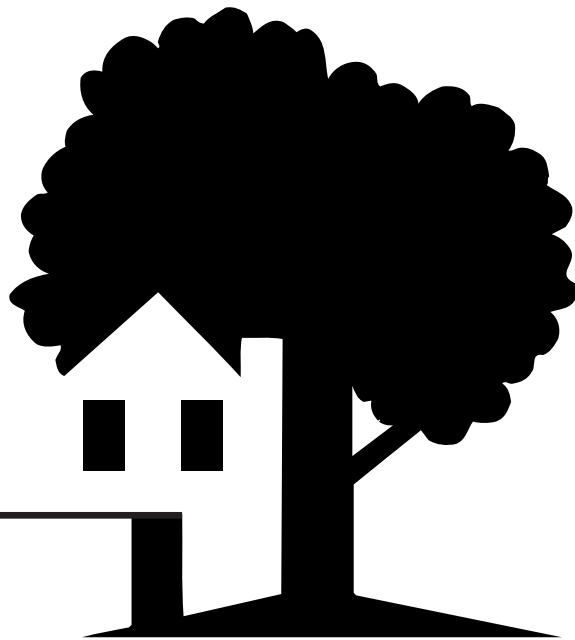
Threat Level

The next step in your assessment is to establish the level of threat and to make your recommendations consistent with that level. For example, if a home is in a low crime area it does not make sense to recommend security equipment capable of securing Fort Knox. If you are not sure of the threat level or the neighborhood could be changing in the near future, it is advisable to make recommendations based on the next higher level. The threat levels are:

Low Threat - A low threat area is one that has very few instances of breaking and entering, or street crime. It could also be a community with good security provided by guards at fixed posts and with mobile patrols. In a low threat area we recommend that the physical security of the house be at the level that an intruder would have to break glass or kick in a door to gain entry. Normally this means

Jim Coleman is a new writer for **The National Locksmith**, and we welcome him aboard. Jim retired from the Federal Government in 1987 having specialized in personnel, physical, and technical security. He is the President of Incol Security Services, Inc., a company providing international security support.

Having previously written for the *Reed Reporter*, **The National Locksmith** continues Jim's series on home security issues.



perimeter doors should have adequate deadbolt locks and all windows should have positive locking devices. Additionally, outward swinging doors should have door pins or non-removable hinges, and you can also recommend optical viewers, additional lighting, landscaping, etc.

Medium Threat - A medium threat area is one where breaking and entering is occurring frequently, but, the entries are occurring when the occupants are not home and occupants are not being injured. In a medium threat area you make the same recommendations as a low threat area and also recommend the use of alarm systems (monitored or local) and adequate perimeter lighting.

High Threat - A high threat area is one in which breaking and entering and street crime is rampant. A high threat exists when home invasions are occurring and home owners or renters are being injured as a result of these crimes. In a high threat area you will make the same recommendations as for a medium threat, and also stress the need for a monitored alarm system and possibly window grills. In a high threat you must be more concerned with interior security. Consider reinforcing an area to be used as a safehaven, having adequate communications, the use of CCTV cameras to monitor visitors, and the use and storage of weapons.

The question of the use or purchase of weapons often comes up during home security surveys. For liability reasons you should not recommend for or against a homeowner or renter obtaining a weapon. If the person does possess or intends to purchase a weapon, you can make recommendations on the safe storage of the weapon and suggest the person be properly trained in its use.

The threat levels outlined above are not absolute. You might be surveying a home in a low threat area, but, the occupant might have a high threat profile in the community. This could be because of his or her position or notoriety, or a person could be specifically targeted for robbery, kidnapping, or murder. In this case you should make your recommendations not on the level of threat for the neighborhood, but the level of threat to the occupant.



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What Goes Around Comes Around...

by
Jake Jakubowski

A long time ago, a feller named Goethe said that there is repetition everywhere, and nothing is found only once in the world. This ol' boy wants to tell you that Goethe was right on the money!

In the June 1992 issue of *The National Locksmith*, I wrote an article titled, "Hang A New Door!". This month, I's going to write a sequel to that earlier article which will bear out

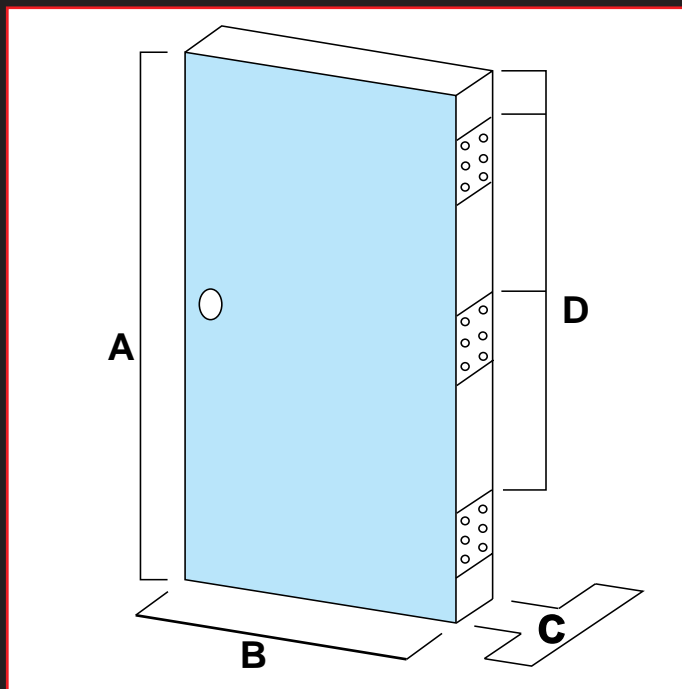
what Goethe had to say and show you how to repeatedly shake the shekel tree on the "come around."

Back in 1992, when my customer complained that the door closer was not working on his back door, I found that the top and middle hinge had pulled loose from the door and the only thing keeping the door from falling out of the jamb was the closer and the bottom hinge. I fixed the

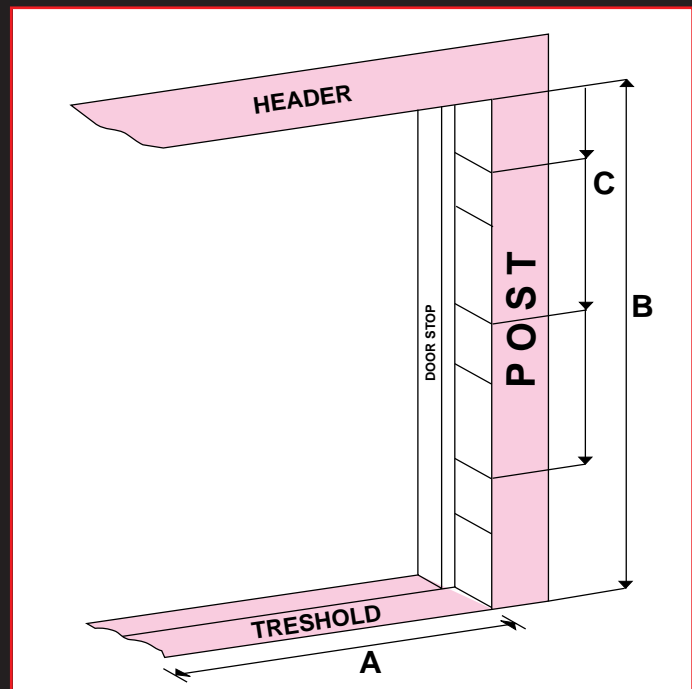
Making repairs is good income.
Making repairs on something you already repaired is still income!



1. The nice new door is now held in place with strap hinges.



2. Make the following door measurements: Height (A), Width (B), Thickness (C), and from the top of the door to the top of each hinge (D).



3. If the door is too badly damaged to make the measurements, make them from the frame. Height (A), Width (B), and from the top of the door to the top of each hinge (C).



Continued from page 108



4. An impact driver made fast work of the rusted screws holding the filler plates in place.

problem with a new door and a Roton Continuous Hinge.

About 18 months later, the same customer called me to rekey their locks and the beautiful new door that I had so proudly written about was now the monstrosity that you see in **photograph one**. (Photograph taken after removal from the jamb.)

The door was no longer a Right Hand Reverse Bevel with a solid, Roton continuous hinge on it, but a Left Hand Reverse Bevel with strap hinges that had been through bolted to the door and frame!

It seems that a freakish wind had come along and torn the door loose of the hinge and pulled the closer off the door. It looked as if the door had been worked on with a sledgehammer and Mack truck!

And, the repairs?

The manager had a friend who was a carpenter and could "fix" the door "cheap." So, he called his, buddy who reversed the hand of the door, installed the exposed hinges and re-installed what was left of the closer.



5. Attaching the new hinges.

The door remained in that condition until early this year when the manager called and asked me to "check the closer on the back door." Now, is this repetition or, is this repetition? After all, that was the very complaint that led replacing the door three years ago!

I told the customer that they would need a new closer, new hinges, new door viewer and - a new door! After getting approval from the owners, the manager gave me the go-ahead to do "whatever was necessary" to "fix" the door.

If you've never replaced a door before, you need to know that the first thing you have to do is to measure the door width and height. Then, you measure the distance from the top edge of the door (on the hinge side) to the top of the first hinge, then from the top edge of the door to the top of the second hinge and finally, from the top edge of the door to the top of the third hinge. (See illustration 2.)

If, as it was in this case, the top edge of the door is badly mangled, it is a good idea to measure the hinge placement on the door jamb. You can do this by measuring from the bottom side of the header to the top edge of the hinge cut-out. Repeat the measurements for the second and third hinges. (See illustration 3.)

With these measurements in hand, you can call your favorite door company or architectural supply house and they can set you up with the proper door. Or, they can tell you where to get the proper door. You see, each manufacturer of metal doors places their hinge cutouts a little differently than the others.

Which means that if you're going to use regular hinges (and not a surface mounted continuous hinge like Roton's) to hang the door you can't, as a rule, just mosey on down to the local home center and buy a door blank. You have to buy the proper door.

The reason I chose to hang this door with regular hinges was because I knew that the problem that necessitated hinge replacement the first time was due to the hinge mounting plates on the door giving way. Had the original installer added a Hagar Full Surface Pivot Hinge to the door, the first replacement probably would not have been necessary.



6. With hinges attached, mount the door to the frame.

The only problem I encountered while installing the new hinges was when I tried to remove the hinge filler plates that I had installed in the jamb when I removed the old hinges. However, my impact driver made short work of the stubborn and rusted screws holding the hinge filler plates in place. (See photograph 4.)

Photograph five shows me attaching the new stainless steel, ball-bearing hinges, with non-removable pins, to the new door. I use this type hinge whenever possible on new or retrofit applications because it is a longer lasting and more trouble free hinge than standard hinges. A dab of "Lock-Tite" helps keep the screws from loosening.

Once you have the hinges on the new door, it is time to put the door in place and secure the hinges and door to the frame or jamb as shown in **photograph six**. Again, some Lock-Tite is a good idea for keeping the screws from vibrating loose.

Photograph seven shows my friend Jerry attaching a Hagar (#253) Surface Mounted Pivot Hinge to the door and frame. This hinge gives steel doors



7. Attaching the lower pivot hinge.



Continued from page 110



8. The door is up and ready for the rest of the hardware.

the added support they need to keep from sagging. Especially when you're hanging a 48" wide door. Heavy doors like this one exert a tremendous amount of pressure on the top hinge.

Also, this type of hinge (available from your favorite locksmith supply house) is a good product to have handy to correct a multitude of door problems before it becomes necessary to replace the entire door. See, "A 'Not So Epic' Sequel," in the November 1992 issue of *The National Locksmith*. That article shows you how easy and profitable pivot hinges are to install.

In fact, I have come to the point where I specify pivot hinges as an integral piece of hardware on any new steel door that I install. That insures that the customer will have a door that is less likely to give problems and it increase the size of the "ticket" - which makes the job more profitable.

Photograph eight shows the door in place and ready for the rest of the hardware to be installed. If you look closely just above where the vertical and horizontal centerlines of the door meet, you can see a template stuck to the door. That template is for a Door-Scope which I have written about before. (See *The National Locksmith*, September 1994, page 74.)

Door Scopes are another item that I specify on each new door installation that I do. Door Scopes also make an excellent add-on sale whether your doing a simple re-key for a commercial customer or installing new deadbolts for a residential

customer. Door Scopes are one of those items that benefits you and your customer and are available from Outlook Products (203) 746-7695.

Photograph nine shows an AFCO #79, 9" Slide Bolt (with a 1-1/2" bolt projection). This slide bolt can be padlocked open or closed and is a superb means of securing a door at night. Of course, because of the nature of this locking device, it requires (in all jurisdictions that I'm familiar with) permission from the local fire marshal (or Authority Having Jurisdiction) to install.

Since the door I installed the slide bolt on had a Securitron DK-25+ and a 62 Maglock on it which was used by only by employees and vendors to enter or leave the premises, the Fire Marshal allowed the addition of the AFCO slide bolt for after hours security, provided the slide bolt was padlocked in the open position during business hours.

Photograph 10 shows the completed installation from the inside of the door. In addition to the AFCO slide bolt and Door Scope, you can see, in the upper left hand corner the new closer and crash stop chain that I installed

Crash Stop chains are another item that help insure a longer life to the customer's door. This particular Crash Stop is made by Ives (#115B26D) and is available from locksmith supply houses and architectural hardware suppliers. The 115B26D has heavy duty steel hardware brackets on each end and the entire chain is covered with a heavy vinyl cover.

This crash stop is designed to prevent the door from being pulled beyond its back check. By installing a crash stop on a heavy steel door, you increase the life of the door, the door closer and other door hardware. It takes me about 10 minutes to install a crash stop on the average door.



9. AFCO's slide bolt.



10. Inside of completed door.

The knob set that you see in photograph 10 does not have a latch mechanism on it. It is used strictly as a door pull.

I know that this type of work isn't for every locksmith out there. But, it is a type of work that customers often cannot find someone to do for them. If you can offer your customer a service such as the one shown here, you're going to add a substantial amount to your income.

Leastways, you'll add enough to make up for some of the slower days that you might have from time to time. On top of that, you'll increase your value to your customer if for no other reason than you showed them that you are a problem solver.

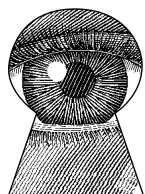
The door, the closer, the hinges, the Door Scope, the Crash Stop Chain, the Pivot Hinge and miscellaneous hardware (Like Molly Jack Nuts) cost me, delivered, \$496. The job took Jerry and I 4-1/2 hours (that's nine man hours) from start to finish, plus 1-1/2 hours driving time.

Take those figures and add your own markup to the hardware, your own hourly labor rate and travel expenses, if applicable, and whatever other charges you may feel are appropriate and see what this job would have netted you. By "netted," I mean: How much would a job like this put in your pocket after you deducted all your expenses?

And, with this particular customer, you would have done it twice. The first time with the initial door replacement. The second time - on the come around - when you "fixed" the carpenter's repair.

Y'all jes' remember that replacing doors ken make y'all money coming and going iff'n yer jes' willing to fin' a need and fill it. An' there's plenty of needs out there to be filled - repeatedly. Y'all heah me now!

THRU THE KEYHOLE



A Peek at Movers & Shakers in the Industry

ATTENTION MANUFACTURERS AND DISTRIBUTORS: Would you like your company and products to be profiled in *Thru The Keyhole*? Please call Managing Editor, Tom Seroogy at (708) 837-2044.

The Abus Carblock

Abus U.S.A., has recently introduced the Carblock steering wheel locking device as a result of consumer requests for a higher form of automobile security. The Carblock features the internationally recognized Abus Plus Disk Key Cylinder which offers resistance to picking, freezing, drilling, and cylinder pulling.

The unique double looped configuration allows protection around both sides of the steering wheel where the steering stem meets the wheel. This configuration slows the thief's efforts to remove the Carblock by forcing the thief to cut the wheel and stem in three places. These cuts would make the automobile most difficult to steer during a get-away.

The Carblock is precision manufactured from high strength steel alloy and is bright neon yellow and is the only steering wheel locking device that exceeds the Swedish Testing Institutes Classification of SSF 3. (Mfg. in Germany.)

It was introduced as a result of George Hansen's (VP at Abus) recent participation in a car show rally in Southern New Hampshire. Bill Holbrook, member of the Mass. Street Rod Assn. noticed the Carblock on Hansen's car and inquired how he could get one. Holbrook owns a 1941 custom Willys Coupe which has been featured in several custom car magazines and is valued at \$35,000. Holbrook mentioned that popular steering wheel locks currently available were easily removed and didn't protect one car club member's restored '57 Chevy convertible.

"The thief used Freon in the keyhole and the lock just snapped in half. He left the lock in the driveway like his business card!" Holbrook said. "I know if they really want your car,

they're going to get it, but come on, the lock should at least make it difficult to steal."

Holbrook continued. "I know in Europe everybody used a kill switch as an extra deterrent, and I installed one in my Willys. I want the added protection of a hard to remove steering wheel lock to send a message to the thief that this car ain't going to be easy to get."

Hansen added that "Holbrook has become a local spokesman for the Carblock, he has sold five to other car club members and is now looking for a commission!"

Hansen adds that recently on Day 1, a TV magazine program, they showed the ease of stealing cars protected by the popular steering wheel locks, and the tremendous black market for U.S. made automobiles. Most autos stolen are either stripped for parts or exported to other countries for two to three times their market value.

The thieves interviewed were quite bold when asked if they would think twice about stealing a car with a popular steering wheel lock. They responded that they could remove the popular steering wheel locks within seconds and it didn't deter them at all. The program host watched a police officer demonstrate that he could remove the popular steering wheel lock within 11 seconds with a hacksaw, and one cut. The police officer stated that it's of little protection to the auto.

Hansen commented that Abus U.S.A. hesitated in bringing in the Carblock from Germany due to the retail price of \$129, he continued "the consumer has a perception that \$40 to \$50 buys the best maximum security steering wheel lock, and that's a tough perception to overcome"

He continues, "Now that it has been demonstrated nationally by a
Continued on page 118



Continued from page 115

major TV network, that the popular steering wheel lock provides little protection from the professional thief, we will begin the marketing effort to distinguish our Carblock as the steering wheel lock of choice. As usual, you get what you pay for when it comes to security."

Of special interest it is important to note that the Carblock is the most popular steering wheel lock used in Europe. The Jaguar Car Co. used the Carblock to protect their cars after the manufacturing process and certain local car rental agencies issue a Carblock with every car rented.

For more information on the Carblock (#73LB500-CBL), contact Abus U.S.A. (617) 935-8370.

The Cencon System 2000 By Mas-Hamilton

Making the most secure electronic lock in the world, the one guarding the nation's secret and top secret materials in the White House, the Pentagon and around the world, was only part of the challenge facing Mas-Hamilton Group, the manufacturer of the only lock certified for those uses. When they set out to use their technical expertise to make the most secure lock for the commercial world, they had a new swet of customer needs to satisfy.

The Cencon System 2000 is "today's most advanced intelligent security locking system," according to J.D. Hamilton, President and CEO of the firm. "That's important, because the lock must keep track of exactly who has been using it and when, in order to provide real security."

According to industry estimates, 90 percent of all theft losses to businesses are due to insiders. "Other security systems may allow unauthorized access, once keys or combinations have been obtained. We saw a need for a new standard in security systems, one that closes the door to the possibility of insider theft," says Hamilton, "and that new standard is embodied in our Cencon System 2000 lock."

The Cencon System 2000 offers unprecedented system flexibility. The lock can be used as a stand alone system or to control access to tens, hundreds or even thousands of locations, worldwide. Although its

advanced technology was designed to meet the highest security needs of the industry, it's cost-effective in almost any application.

Based on Mas-Hamilton's award-winning national security lock technology, the Cencon System 2000 locks are self-powered and need no batteries, making them virtually maintenance-free. The lock's internal computer generates an OTC (One Time Combination), unique to each lock and user. Authorized users can gain access only by using the dispatched OTC and their unique personal identifiers. The lock maintains a complete audit trail within, ready to download at any time the past users names, type of entry, as well as the time and date of all entries and exits.

"The best deterrent to an insider theft is the certainty of discovery", states Mr. Hamilton, "and with the Cencon System 2000, discovery is inescapable."

For more information about the Cencon System 2000 and other Mas-Hamilton security system products, write to Mas-Hamilton Group, Inc.: 805-D Newtown Circle, Lexington, KY 40511, or call (800) 950-4744 or fax (606) 253-4748.

Midwest Wholesale Hardware

When Ed Nettles incorporated Midwest Wholesale Hardware in 1987, there were seven employees and they




occupied approximately 8000 square feet of office and warehouse space. Today, Midwest Wholesale Hardware has its headquarters in Kansas City, Missouri and also a full service sales and warehouse operation in Orlando, Florida. Midwest currently has 55 employees and occupies 57,000 square feet of space to warehouse approximately 3500 inventory items representing 22 manufacturers.

Mr. Nettles is extremely proud of all personnel at Midwest and credits them as the single biggest reason for the success of the company. Midwest employees five full time outside salesmen who travel the United States calling on customers. They employ twelve inside sales people who are actually consultants and technical advisors to the customer. These sales people, as well as the customer service and warehouse personnel, are continually being trained and reeducated to keep pace with the everchanging marketplace, new products and modification of products.

Midwest Wholesale Hardware has chosen to represent primarily American made products produced by quality manufacturers. It is also a philosophy of the company not to sell to end-users. Midwest feels that by not selling to contractors and institutions; they are not competing with their customer base.

Midwest continues to upgrade their communications equipment to maintain superior service to the customer. In addition to having and on-line integrated computer system, Midwest has recently acquired an imaging system that stores all information such as invoices, shipping tickets and purchase orders on compact discs. This process greatly reduces the time required to retrieve information requested by the customer. Midwest continues to look for new products and services that will enhance its value to the customer.

Bob England manages the operation at Midwest's headquarters in Kansas City and Jim Lee is the manager at the Orlando location. Both individuals have been with the company since its inception and are customer oriented managers.

To contact Midwest Wholesale Hardware call: (800) 821-8527 in Kansas City and (800) 659-8527 in Orlando. 



KEY CODES

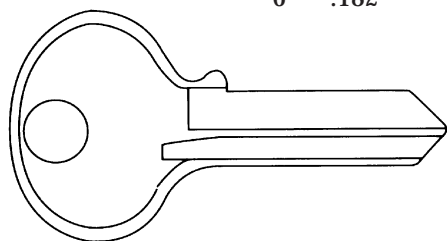
Hudson H0001 - H3000 (continued)

Keyblanks
Hudson H20
Ilco 1003M
Taylor R22B
Jet HL1
Curtis CO106
Star 5AU1
ESP CO106

HPC
Code Card: C26
Cutter: CW1011
Stop: Shoulder

Framon
Cut start: .191
Cutter: FC8445
Cut To Cut: .125
Spacing Block: #1
Stop: Shoulder

Depths		Spaces	
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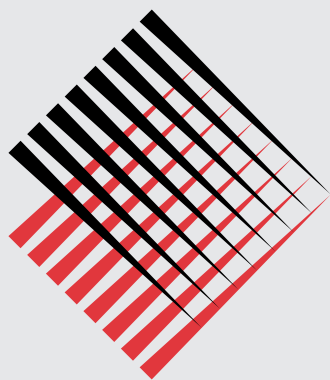
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H2115	52250	H2125	35421	H2135	52541	H2145	64202	H2155	53221



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H2218	50121	H2243	36521	H2268	14052	H2293	36612	H2318	32141
H2219	11042	H2244	44204	H2269	22534	H2294	14050	H2319	26402
H2220	51443	H2245	54103	H2270	51621	H2295	32345	H2320	40316
H2221	64646	H2246	34656	H2271	14232	H2296	50343	H2321	16632
H2222	02150	H2247	64132	H2272	22554	H2297	24402	H2322	53421
H2223	24004	H2248	41610	H2273	54416	H2298	54123	H2323	26264
H2224	51665	H2249	63252	H2274	30521	H2299	11665	H2324	12565
H2225	62334	H2250	24204	H2275	25216	H2300	52616	H2325	01456

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H2326	24040	H2381	03230	H2436	25056	H2491	12545	H2546	16656
H2327	11621	H2382	66516	H2437	50321	H2492	61614	H2547	41232
H2328	53223	H2383	26224	H2438	40550	H2493	54250	H2548	40554
H2329	22350	H2384	52610	H2439	03432	H2494	42312	H2549	33423
H2330	01452	H2385	65052	H2440	65412	H2495	56561	H2550	42442
H2331	53465	H2386	34630	H2441	40334	H2496	21630	H2551	34545
H2332	01630	H2387	52343	H2442	52054	H2497	30123	H2552	46446
H2333	52505	H2388	16612	H2443	34250	H2498	63216	H2553	34012
H2334	23012	H2389	10141	H2444	56456	H2499	21454	H2554	54501
H2335	24464	H2390	05056	H2445	30563	H2500	41216	H2555	12230
H2336	14545	H2391	54032	H2446	44202	H2501	56323	H2556	23454
H2337	64262	H2392	43256	H2447	54561	H2502	26620	H2557	63432
H2338	54210	H2393	26464	H2448	22354	H2503	52141	H2558	33201
H2339	24312	H2394	20150	H2449	52123	H2504	23054	H2559	41212
H2340	56505	H2395	52432	H2450	66134	H2505	12432	H2560	56545
H2341	21412	H2396	03214	H2451	13423	H2506	24532	H2561	43456
H2342	41614	H2397	50561	H2452	41452	H2507	56123	H2562	65234
H2343	12050	H2398	16452	H2453	54232	H2508	36450	H2563	20116
H2344	22114	H2399	34145	H2454	10303	H2509	61456	H2564	63456
H2345	12523	H2400	46464	H2455	24534	H2510	26420	H2565	44534
H2346	26552	H2401	61432	H2456	40402	H2511	40424	H2566	61650
H2347	34450	H2402	46624	H2457	14434	H2512	54430	H2567	44112
H2348	20556	H2403	36212	H2458	62262	H2513	36345	H2568	21250
H2349	40224	H2404	66532	H2459	24354	H2514	34163	H2569	66550
H2350	12650	H2405	30141	H2460	36565	H2515	63054	H2570	16650
H2351	23634	H2406	52452	H2461	21610	H2516	16210	H2571	24332
H2352	40132	H2407	40220	H2462	54412	H2517	23412	H2572	42132
H2353	52545	H2408	30034	H2463	03210	H2518	42134	H2573	65256
H2354	30430	H2409	41434	H2464	61636	H2519	03256	H2574	54565
H2355	11023	H2410	50505	H2465	34565	H2520	21434	H2575	46554
H2356	66150	H2411	65054	H2466	54234	H2521	40242	H2576	66534
H2357	50523	H2412	40462	H2467	61656	H2522	54254	H2577	61052
H2358	30454	H2413	36303	H2468	25650	H2523	66334	H2578	24244
H2359	61416	H2414	40264	H2469	62246	H2524	35443	H2579	65232
H2360	20136	H2415	52345	H2470	01032	H2525	44020	H2580	42022
H2361	43650	H2416	01454	H2471	26440	H2526	52434	H2581	24334
H2362	51465	H2417	26242	H2472	10143	H2527	63012	H2582	34321
H2363	03052	H2418	23250	H2473	23216	H2528	24556	H2583	43250
H2364	52456	H2419	25656	H2474	52650	H2529	10321	H2584	21654
H2365	30561	H2420	52161	H2475	03252	H2530	50541	H2585	40310
H2366	64242	H2421	12301	H2476	41616	H2531	16454	H2586	03234
H2367	33421	H2422	65236	H2477	55223	H2532	56234	H2587	31201
H2368	61450	H2423	21450	H2478	34223	H2533	34016	H2588	14454
H2369	43410	H2424	55243	H2479	65230	H2534	53423	H2589	53045
H2370	26312	H2425	52656	H2480	53425	H2535	63416	H2590	63254
H2371	32565	H2426	21614	H2481	21432	H2536	56563	H2591	42040
H2372	21632	H2427	51265	H2482	34123	H2537	24424	H2592	65250
H2373	41034	H2428	35263	H2483	44312	H2538	63450	H2593	13223
H2374	65456	H2429	54321	H2484	43416	H2539	44354	H2594	22310
H2375	36632	H2430	36501	H2485	32234	H2540	42020	H2595	65432
H2376	53403	H2431	26622	H2486	56343	H2541	34543	H2596	24554
H2377	16630	H2432	34121	H2487	23256	H2542	52323	H2597	10232
H2378	26240	H2433	00356	H2488	40426	H2543	24202	H2598	16616
H2379	44356	H2434	12345	H2489	22556	H2544	61450	H2599	63232
H2380	55245	H2435	25610	H2490	55221	H2545	55645	H2600	44240



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H2601	11301	H2626	01300	H2651	13301	H2676	01322	H2701	15301
H2602	55325	H2627	11543	H2652	01524	H2677	13543	H2702	03326
H2603	11303	H2628	01302	H2653	13303	H2678	03124	H2703	15303
H2604	55341	H2629	11545	H2654	01526	H2679	13545	H2704	03340
H2605	11321	H2630	01304	H2655	13321	H2680	03126	H2705	15321
H2606	55343	H2631	11563	H2656	01540	H2681	13563	H2706	03342
H2607	11323	H2632	01320	H2657	13323	H2682	03140	H2707	15323
H2608	55345	H2633	11565	H2658	01542	H2683	13565	H2708	03362
H2609	11325	H2634	01322	H2659	13325	H2684	03142	H2709	15325
H2610	55363	H2635	13101	H2660	01544	H2685	15101	H2710	03364
H2611	11341	H2636	01324	H2661	13341	H2686	03144	H2711	15341
H2612	55365	H2637	13103	H2662	01546	H2687	14103	H2712	03520
H2613	11343	H2638	01326	H2663	13343	H2688	03146	H2713	15343
H2614	01100	H2639	13121	H2664	01562	H2689	15121	H2714	03522
H2615	11363	H2640	01340	H2665	13363	H2690	03300	H2715	15345
H2616	01102	H2641	13123	H2666	01564	H2691	15123	H2716	03524
H2617	11365	H2642	01342	H2667	13365	H2692	03302	H2717	15363
H2618	01104	H2643	13125	H2668	03100	H2693	15125	H2718	03526
H2619	11521	H2644	01362	H2669	13521	H2694	03304	H2719	15365
H2620	01120	H2645	13141	H2670	03102	H2695	15141	H2720	03540
H2621	11523	H2646	01364	H2671	13523	H2696	03320	H2721	15521
H2622	01140	H2647	13143	H2672	03104	H2697	15143	H2722	03542
H2623	11525	H2648	01520	H2673	13525	H2698	03322	H2723	15523
H2624	01142	H2649	13145	H2674	03120	H2699	15145	H2724	03544
H2625	11541	H2650	01522	H2675	13541	H2700	03324	H2725	15525

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H2726	03562	H2781	31543	H2836	23340	H2891	51303	H2946	41126
H2727	15541	H2782	21524	H2837	35301	H2892	25304	H2947	53323
H2728	03564	H2783	31545	H2838	23342	H2893	51321	H2948	41140
H2729	15543	H2784	21526	H2839	35303	H2894	25320	H2949	53325
H2730	21102	H2785	31563	H2840	23344	H2895	51323	H2950	41142
H2731	15545	H2786	21540	H2841	35321	H2896	25322	H2951	53341
H2732	21104	H2787	31565	H2842	23362	H2897	51325	H2952	41144
H2733	15563	H2788	21542	H2843	35323	H2898	25324	H2953	53343
H2734	21120	H2789	33101	H2844	23364	H2899	51341	H2954	41146
H2735	15565	H2790	21544	H2845	35325	H2900	25326	H2955	53345
H2736	21122	H2791	33103	H2846	23520	H2901	51343	H2956	41300
H2737	31101	H2792	21546	H2847	35341	H2902	25340	H2957	53363
H2738	21124	H2793	33121	H2848	23522	H2903	51345	H2958	41302
H2739	31103	H2794	21562	H2849	35343	H2904	25342	H2959	53365
H2740	21126	H2795	33123	H2850	23524	H2905	51363	H2960	41304
H2741	31121	H2796	21564	H2851	35345	H2906	25344	H2961	53521
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H2745	31125	H2800	23100	H2855	35365	H2910	25362	H2965	53525
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H2748	21146	H2803	33145	H2858	23544	H2913	51525	H2968	41326
H2749	31143	H2804	23104	H2859	35523	H2914	25366	H2969	53543
H2750	21300	H2805	33521	H2860	23546	H2915	51541	H2970	41340
H2751	31145	H2806	23120	H2861	35525	H2916	25520	H2971	53545
H2752	21302	H2807	33523	H2862	23562	H2917	51543	H2972	41342
H2753	31301	H2808	23122	H2863	35541	H2918	25522	H2973	53563
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H2755	31303	H2810	23124	H2865	35543	H2920	25524	H2975	53565
H2756	21320	H2811	33541	H2866	25100	H2921	51563	H2976	41346
H2757	31321	H2812	23126	H2867	35545	H2922	25526	H2977	55101
H2758	21322	H2813	33543	H2868	25102	H2923	51565	H2978	41362
H2759	31323	H2814	23140	H2869	35563	H2924	25540	H2979	55103
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H2761	31325	H2816	23142	H2871	35565	H2926	25542	H2981	55121
H2762	21326	H2817	33563	H2872	25120	H2927	53103	H2982	41366
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H2764	21340	H2819	33565	H2874	25122	H2929	53121	H2984	41500
H2765	31343	H2820	23146	H2875	51103	H2930	25546	H2985	55125
H2766	21342	H2821	35101	H2876	25124	H2931	53123	H2986	41502
H2767	31345	H2822	23300	H2877	51121	H2932	25562	H2987	55141
H2768	21344	H2823	35103	H2878	25126	H2933	53125	H2988	41504
H2769	31363	H2824	23302	H2879	51123	H2934	25564	H2989	55143
H2770	21346	H2825	35121	H2880	25140	H2935	53141	H2990	41506
H2771	31365	H2826	23304	H2881	51125	H2936	41102	H2991	55145
H2772	21362	H2827	35123	H2882	25142	H2937	53143	H2992	41520
H2773	31521	H2828	23320	H2883	51141	H2938	41104	H2993	55301
H2774	21364	H2829	35125	H2884	25144	H2939	53145	H2994	41522
H2775	31523	H2830	23322	H2885	51143	H2940	41120	H2995	55303
H2776	21366	H2831	35141	H2886	25146	H2941	53301	H2996	41524
H2777	31525	H2832	23324	H2887	51145	H2942	41122	H2997	55321
H2778	21520	H2833	35143	H2888	25300	H2943	53303	H2998	41526
H2779	31541	H2834	23326	H2889	51301	H2944	41124	H2999	55323
H2780	21522	H2835	35145	H2890	25302	H2945	53321	H3000	41540

TNL

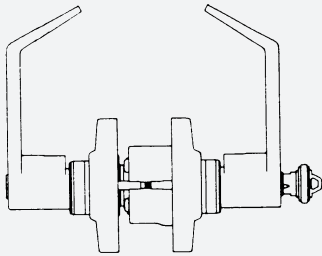
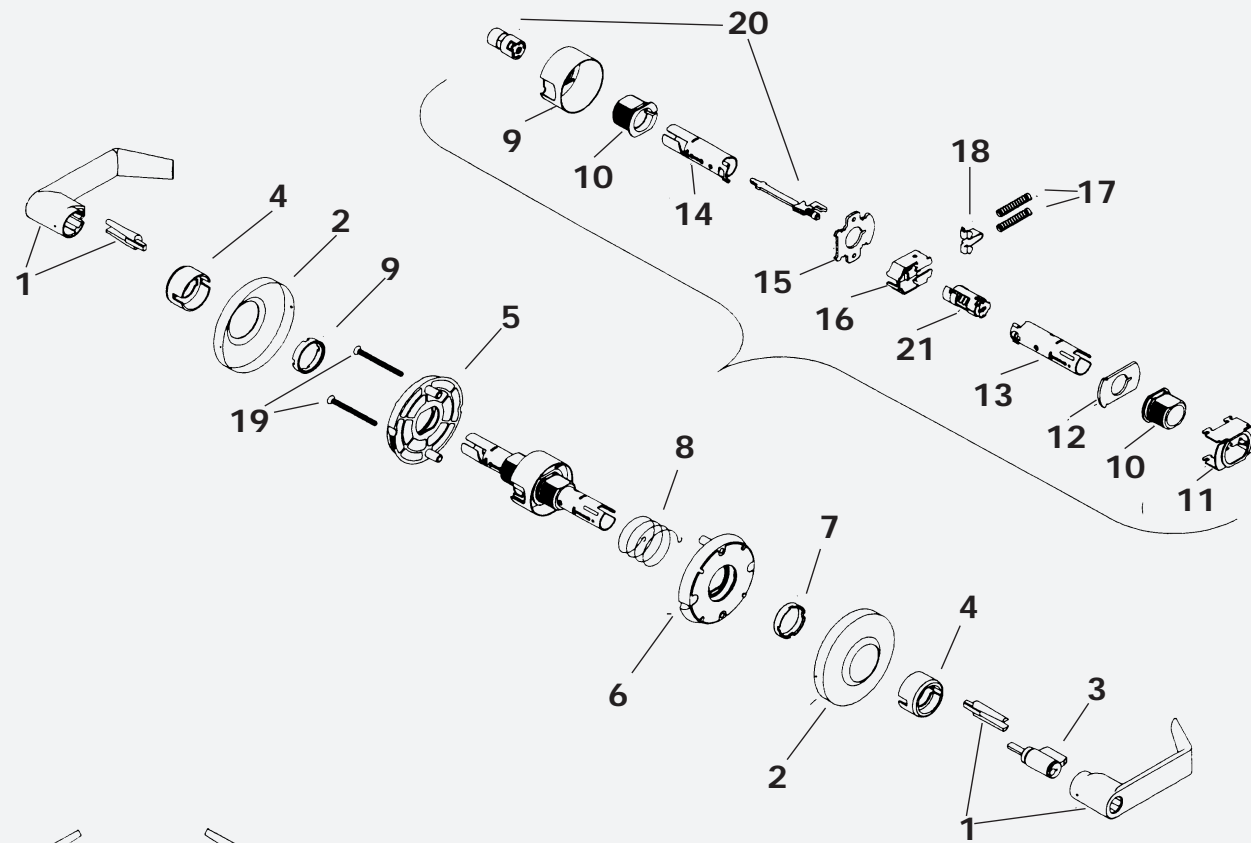
Schlage's AL Series Lever

Schlage introduces a new Grade 2 lever, providing another level security in its lever line.



The AL-Series lever by Schlage Lock Company is a new Grade 2 lever, based on the A series chassis. The new lever features several strengthening components — such as a stainless steel interlocking spindle — that reinforce the lever against attack, and comes in three lever styles. The Grade 2 rating of this unit keeps it relatively inexpensive while able to fit applications in office, medical, hotel/motel, retail, government and commercial facilities.

Continued from page 132



AL50PD

Push-button locking. Push-button locks outside lever until unlocked with key or by rotating inside lever.

AL50PD Entrance Lock Parts

1	51-023	Lever, Open	11	A700-028	Hub, 2" Thick Doors
2	04-060	Rose	11	A700-006	Frame, Hub
3	21-020	Cylinder	12	A700-004	Plate, Hub, Outside
4	C604-396	Driver, Lever	13	A710-001	Spindle & Catch, Outside
	C604-403	Driver, Lever, 2" Thick Doors	14	A710-004	Spindle & Catch, Inside
5	A710-011	Spring Cage, Inside	15	A501-305	Plate, Hub, Inside
6	A710-012	Spring Cage, Outside	16	A590-159	Slide, Non-Restoring
7	C604-354	Castle Nut	17	A501-311	Spring, Slide
8	C503-308	Spring, Anchor	18	S508-597	Seat, Spring
9	A700-005	Housing	19	C604-395	Mounting Screw
10	A700-005	Hub	20	51-039	Plunger & Button, Inside
			21	A301-402	Cam

Continued from page 134

The AL-Series standard-duty keyed levers have threaded hubs and locking nuts that literally bolt the lock chassis to the door to prevent loosening. The heavy duty spring cages have true through-bolting outside the standard 2-1/8" door preparation — keeping the lock chassis from rotating inside the door and disengaging from the latch. Heavy duty compression springs give the levers fast return action and minimize drooping.

The new levers also incorporate a pending Schlage-patent door range adjuster which provides quick and easy adjusting for different door thicknesses.

Together with Schlage's Grade-1, L-Series mortise and D-Series cylindrical locksets, the AL-Series

completes an extensive line of levers and provides the best selection of performance features for any commercial facility.

General features for the AL series lever set include:

Exposed Trim: Wrought brass and bronze. Levers are pressure cast zinc, plated to match finish symbols.

Keying: 6 Pin tumbler with two nickel silverkeys per lock. Stock locks are keyed 6 pin "0" bitted. Other keying options available from the factory include masterkeying, grandmasterkeying, construction keying, and interchangeable core. Also available with Primus high security cylinders.

Door Range: 1-3/8" to 1-7/8" (35mm to 48mm) standard. 1-7/8" to 2" (48mm to 51mm) regular parts assembled to order.

Backset: 2-3/4" (70mm) standard. 2-3/8" (60mm) and 3-3/4" (95mm) backset latches available. 5" (127 mm) backset links also available.

Schlage Lock Company, established in 1925, is the leader in the commercial lock industry. The San Francisco-based company is part of worldwide Ingersoll-Rand. For more information and reader service fulfillment, call Schlage Lock Company at (415) 467-1100, ext. 5200 or write to Schlage Lock Company, 2401 Bayshore Blvd., San Francisco, CA 94134 (Request MS-R110 product literature).



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TEST DRIVE



**Taking Industry
Products for a Spin
Around the Block**

THE SMART PAC II

PRODUCT: The Smart Pac II (model #2005) by Hanchett Entry Systems (H.E.S.). Available through H.E.S. distributors for approximately \$24.

PRODUCT DESCRIPTION: The Smart Pac II is a simple, yet versatile in-line power controller for use with 7000 series and 1000 series H.E.S. electric strikes. Operating from either a 12 or 24 volt, AC or DC power source, the unit regulates the initial and continuous/holding output voltage per the solenoid requirements of the H.E.S. strike. Output is always DC. Five wire nuts are included.

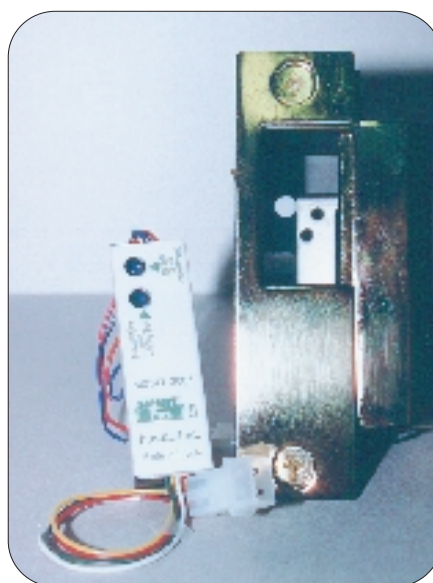
FRIENDLINESS: Three factors account for this unit's extremely user-friendly nature. First, it is compact. Measuring approximately 2-3/4" (l) x 7/8" (w) x 3/4" (d), this device is easily attached to the strike and tucked into the door's frame.

If the frame is made of wood or is mortar filled, very little work is necessary to create an adequate cavity to seat the unit. If room is not available, the unit can be placed anywhere in line with the strike and power source by cutting the connectors and using the five wire nuts provided with the package.

Second, the instructions are complete and well prepared. The product description and operation are clearly explained, and the included line art makes errors almost impossible.

Third, the design is very simplistic and the unit is easily configured for fail-safe/fail-secure strikes in 12 or 24 volts. Timer adjustments are clearly labeled and easily accessible on the side of the unit.

FEATURES: One of the most intriguing aspects of this little piece is that it virtually takes the place of a power supply. It rectifies and filters the power from a standard Class II or



plug-in step-down transformer to create a clean 12 or 24 volt DC output.

When the 12 volt output is selected, the initial output is 12 volts, dropping to 9 volts after a few seconds. When a 24 volt output is selected, the initial output is 24 volts, dropping to 18 volts after a few seconds. The drop in voltage allows continuous duty solenoids to operate cooler and last longer.

DESCRIPTION:
Smart Pac II by Hanchett Entry Systems.
COMMENTS:
Easy to install, economical and filled with features.
TEST DRIVE RESULTS:
This unit installed and operated exactly as described. A definite asset for the electronic locksmith.

The Smart Pac II also includes a Timed Release function. When used, this feature powers the strike for 2 to 8 seconds whenever the user activates the strike. The release time is adjustable using the adjustment settings on the side of the unit.

Not to be outdone, the Smart Pac II also contains protective circuitry. A MOV protects any electronic equipment from reverse power surges sometimes created by a solenoid as it powers down. To protect the more expensive strike, the Smart Pac II also includes a non-replaceable fuse.

COMMENTS AND SUGGESTIONS: The Smart Pac II is an easy to use and easy to install power controller that includes matching connectors for the 1003 and 7000 series strikes. When used with the H.E.S. 1003 series strike (Smart Strike), there is a five year full replacement warranty on both the strike and the Smart Pac.

While the Smart Pac II may be used with other manufacturer strikes, they should be tested first. The output of the Smart Pac II is designed for the volt/amp requirement and solenoid spring pressures of the H.E.S. solenoid.

Also, the Smart Pac is never to be used with an electromagnet lock. While the initial output voltage may be adequate for holding the lock, the subsequent voltage drop of the unit during the continuous/holding stage severely degrades the holding force of the lock.

Suggestions for improvement? Only one - having a list of other manufacturer's locks with which this unit is compatible would certainly be nice.

CONCLUSION: Considering the low cost and ease of installation, there's no reason the Smart Pac II should not be a stock item for the electronic locksmith. **TLN**