The official publication of ALOA SPAI, an international association of security professionals February 2017

KEYNOTES

SECURING YOUR SUCCESS

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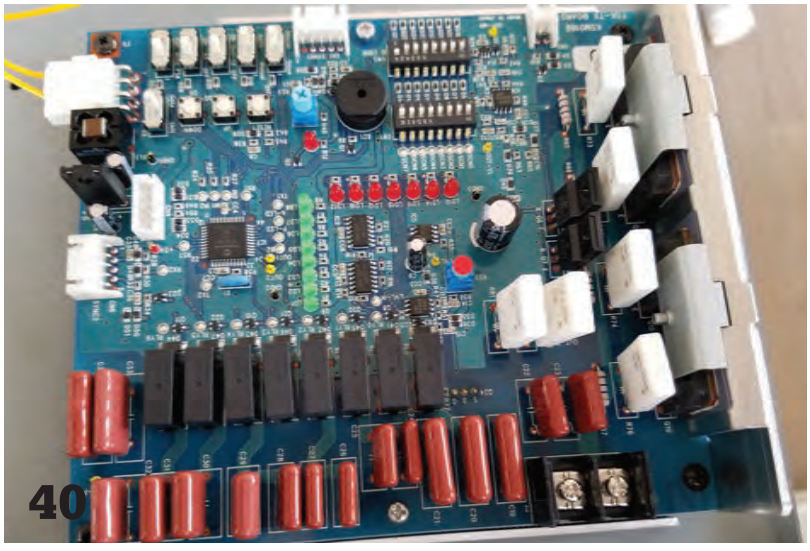

Features

February 2017 | Volume 63, Issue 2

Spotlights

What's New

Departments

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KEYNOTES

FEBRUARY 2017 | VOLUME 63, ISSUE 2

Mission Statement: The mission of the ALOA Security Professionals Association, Inc., as dedicated members of the security industry, is to ensure professional excellence and ethics; create a public demand for professional locksmith services; represent and speak for the locksmith industry; and expand the exchange of trade information and knowledge with other security-related organizations to preserve and enhance the security industry.

Keynotes (ISSN 0277 0792) is published monthly except for a combined July/August issue by ALOA Security Professionals Association, Inc., 3500 Easy St., Dallas, Texas 75247. Subscription rates are $25 per year for members. Periodical class postage paid at Dallas, Texas and additional offices.

Keynotes is published monthly.

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Keynotes, 3500 Easy St.,
Dallas, Texas 75247-6416.

New Year, New Business

I WANTED TO KNOW HOW MANY OF YOU read my February 2016 message about learning a new part of your trade.

"No, don't run. No, don't hide. Embrace this new technology and learn how to grow your business with it. Access control and CCTV are new areas for us, and we must learn them to grow our shrinking business."

The cutting of keys is not going away, but today's technology is making it easier for consumers to get a key made just by taking a picture of it, sending the picture off and receiving a cut key that's *guaranteed to work* — or it will be replaced with one that does. New unmanned kiosks are popping up all over, and some of the companies are coming to ALOA to find a way to work with our locksmiths. The main reason is that they are limited as to what keys they can cut. They want to be assured that when they recommend a locksmith to their customers, they are not recommending a scammer. They have also offered to place the kiosk in or just outside of the locksmith's shop, and then the locksmith will get a percentage of each key cut. This frees the locksmith up to do business that he gets paid more for.

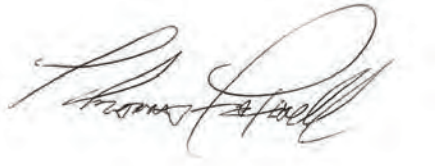
If you think this isn't important for your business, look around at all of the new keyless cars and new home locks with button combinations. Even video intercom systems for residents are becoming a big business. Times are changing fast, and if we don't embrace it and learn how to grow with it, we will be left behind.

Perhaps you aren't sure of that next step to acquire financing to grow your business from two or three trucks to five or 10 trucks. How many in-house people does it take in relation to the number of trucks on the road? Want to know more about managing staff, AR, AP, dispatching, getting rid of paper and moving out of 1990 and into 2017? Your next step should be to attend the Security Leaders Business Conference directly following SAFETECH at the same venue. That is where you will get these answers and learn all about how to grow your business.

It's a new year! Get up, get out and go get it.

A special Valentine's Day wish to all the women in locksmithing: Please be ALOA's valentine and get more involved in this wonderful organization!

Best regards,



Tom Foxwell, RL, CAI, CFDI
President
ALOA Security Professionals Association, Inc.
president@aloa.org

Enhance Your ALOA Connections

As a member-driven organization, growing our membership is always a focus. With every added new member, it doesn't just increase our numbers but it also increases our overall strength. With greater representation, ALOA has a stronger voice in the industry and within our national and local governments, and we gain traction with consumer name recognition as well. Strong membership has a great impact on us as an association and as individual professionals.

But increasing membership isn't just for the association leadership; it's a job for us all. So often, successfully onboarding new members is the direct result of strong relationships: relationships among fellow professionals locally, among coworkers and among friends. Having personal connections with potential new members helps the process so much, as they can see the benefits of ALOA from a personal point of view.

At your next local association, social or work meeting, take the time to talk to your colleagues about ALOA and its activities and benefits. Explain how ALOA has impacted your career, providing you with industry-leading education and networking opportunities. Especially seek out those new to the security industry whose horizons may be especially broadened and knowledge strengthened through ties to ALOA.

The following are just a few of the ALOA benefits you can share with new recruits:

Professional Development

- Year-round classes offered at the ALOA Training Center and online education
- Industry certification: The Proficiency Registration Program (PRP) now available at testing centers nationwide
- ALOA SPAI Convention and Security Expo, Security Leaders Business Conference and SAFETECH

Business Management & Marketing

- $15,000 free industry bond
- Listing in FindALocksmith.com
- Locksmith search and referral
- Job Center
- *Keynotes* magazine and Electronic Weekly Update

Federal Government Advocacy & Public Relations

- Legislative representation, benefiting you and the entire industry
- Participation in state and federal licensing issues
- Legal guidance and advice regarding locksmith scammer practices

Industry Partners & Affinity Programs

- WorldWide Insurance Services Inc. Available health benefits program that provides medical, dental, pharmacy, vision, life and accident benefits
- ClearStar Security Network

Sale Items (Member Discounts Apply)

- Textbooks, manuals and CDs on locksmithing, safes and vaults, business and more
- ALOA logo pins, patches and decals to promote your membership status

For a fuller description of ALOA benefits that you can share with prospective members, see my column on page 6 of the November 2016 issue of *Keynotes*. We also have membership brochures and flyers that you can distribute; please contact membership@aloa.org to request copies or a PDF to print.

While you're thinking about relationships, perhaps consider if you can forge a stronger connection with ALOA yourself. Think about volunteering for specific committees or tasks, or perhaps even run for a board position. Nominations for the board of directors are open through March 31, so you still have time to get your materials in. A copy of the nomination petition was published in the December 2016 issue of *Keynotes*, and it can also be downloaded from the Members Only section on ALOA.org. Open regional director positions for this year include Southeast, North Central, Southwest and Associate. If you have any questions about what being a board member entails, please feel free to contact us at membership@aloa.org.

Mary A. May

Mary A. May
Executive Director
mary@aloa.org

EXPLORE WHAT'S INSIDE

SIGN UP FOR A DETEX TRAINING SESSION.

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For a complete list of our training sessions, visit www.detex.com/training2 or call 800-729-3839.

UPCOMING TRAINING SESSION:
TLA Houston
February 24, 2017

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ALOA Awards First Veteran Scholarship

ALOA SPAI has awarded its first veterans scholarship to U.S. Army Specialist Wade Martin, providing him with financial support and training to prepare him for a career as a security professional. He has served in the Army since 2012 and remains active.

As he begins his transition to civilian life, SPC Martin will receive up to 376 hours of professional education through ALOA, focusing on locksmith fundamentals, business basics and electronics. During his training, SPC Martin will be given the opportunity to serve as an apprentice at Area Wide Locksmith in Lampasas, TX. This lock shop chose to offer SPC Martin an apprenticeship based on his commitment to training and his aspiration to one day purchase the business following the owners' retirement.

"Wade Martin was recognized with the first ALOA Veterans Scholarship because of his commitment and vision for the industry," says Jim Hancock, ALOA education and certification manager. "We're looking forward to the positive impact Martin will have at Area Wide Locksmith and supporting him with training during this transition."

ALOA uncovered the need to have more training opportunities available in the locksmith industry. To support this opportunity, ALOA secured GI Bill funding to make ongoing technical training for veterans more accessible. This education will be coupled with on-the-job training to create a well-rounded experience in the industry.

Allegion is currently the sole sponsor of this program, supplementing travel, training and wage expenses that the GI Bill does not cover. For more information on becoming involved with the veteran training program, please contact education@aloa.org.

SPC Wade Martin is the first recipient of ALOA's Veteran Scholarship.

NEWS BRIEFS

VIZpin, a manufacturer of commercial smartphone access control products, has announced that Wendi Grinnell has joined the company as director of marketing. She will be responsible for conceiving and executing marketing strategies and tactics that drive growth and increase brand awareness.

ASSA ABLOY has announced the integration of their Aperio wireless lock technology with Access Manager from BadgePass, an integrated credential management solution. The integration offers BadgePass customers a way to connect additional openings to their existing Access Manager system. Aperio is a global wireless platform available across a broad range of locking hardware from ASSA ABLOY Group brands, offering the flexibility to address a variety of applications throughout any facility.

CHAPTER NEWS

The Nebraska Locksmith Association/Northeast Chapter of ALOA will hold a meeting on April 22 and will hold a class April 21 at IDHoffman. Supper will be provided.

dormakaba to Acquire Mechanical Security Businesses From Stanley Black & Decker

dormakaba has signed an agreement to acquire certain mechanical security businesses from Stanley Black & Decker, including Stanley Commercial Hardware, spanning mainly across North America and including a production facility in Taiwan as well as GMT in China. Sargent and Greenleaf, a safe lock provider that also forms part of Stanley Black & Decker's Mechanical Security business, is not included in the transaction.

"This transaction builds on the dormakaba merger, which boosted our global market position, and the recently completed Mesker acquisition, which will expand our North America offering to cover all essential door components including manual doors," says Riet Cadonau, CEO of dormakaba.

Completion of the transaction is expected in the first quarter of 2017, with full operational integration expected to take up to three years. Stanley Commercial Hardware employs nearly 1,000 people and operates with three main brands, including BEST.

The acquisition will provide selected portfolio improvements, such as master key systems and hinges as well as ANSI-certified products manufactured in Stanley's Taiwan production facility, which is part of the acquisition. China-based GMT, also included in the acquisition, employs around 600 people and is a provider of commercial hardware products primarily for the mid- and lower price point markets.

PRODUCT BRIEFS

Westinghouse Security has introduced its HD 4-in-1 technology and IP series surveillance cameras as well as digital and network video recorders. Both the HD and IP series cameras deliver 1080 high-definition resolution but employ different delivery systems. The HD series cameras work over existing coaxial cables that use TVI, CVI, AHD and analog technologies. The IP series cameras function via Power over Ethernet, letting users leverage their existing network infrastructure. Both camera series offer turret, dome, bullet and pan tilt style cameras, providing mix-and-match options.

RITE Door has launched 10 new deco levers for use in conjunction with the D3080 trim series. With the addition of these options, the RITE Door is now available with 18 levers to match building hardware. Additionally, RITE Touch for keyless access control for glass openings is now available with choice of thumbturn or new ADA compliant accessibility lever. Intended for indoor applications, the surface-mounted touchscreen technology requires no modification to single or double glass.

Hollon Safe Co. is now producing depository safes with almost 40% thicker steel, using solid ¼" steel bodies. The new depository safes are 30% heavier than the previous models, but pricing will remain the same.

Keyline has introduced the TKG.KIT, a software update to clone 80-bit transponders for Toyota models that have the "G" stamped on the blade. The solution is available now on InternationalKeySupply.com. The TKG.KIT works exclusively with the Keyline 884 Mini or 884 Decryptor Ultegra with the latest software versions. The 80-bit cloning is done through the Internet using the Keyline Cloning Tool program for PC (884 Ultegra) or the Keyline Cloning App (884 Mini).

Norton Door Controls, an ASSA ABLOY Group brand, has announced its 1601 door closer is now fully adjustable to meet the opening and closing force requirements for a wide range of doors. Beyond an adjustable size 1-6 spring, the 1601 door closer is available with a variety of arms, brackets and finishes. The 1601 door closer has a one-piece, aluminum alloy body, heavy-duty arms and quick-adjust slide arm, and it's non-handed for installation on right or left-hand swing doors.

Kaba Ilco Corp. has released the next generation of Futura Pro, an electronic cutting machines that combines two cutting stations into one model. It's designed to decode and copy laser and dimple, as well as edge-cut and cruciform style keys. New features include faster cutting cycles and response times, upgraded electronics and a shortcut function for vehicle key cutting code searches. Optional accessories expand cutting capabilities to include Tibbe style, tubular type and more.

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Emporia
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Orlando Valdez
Apprentice
Farmers Branch
Robert A. Ferguson
Sponsor: Stephanie Barr

WASHINGTON

Puyallup
Nathan W. Wilson
Sponsor: Milo R. White, CML

These applicants are scheduled for clearance as members of ALOA. The names are published for member review and for comment within 30 days of this Keynotes issue date, respectively, to ensure applicants meet the standards of ALOA's Code of Ethics. Protests, if any, must be addressed to the ALOA membership department, signed and submitted via e-mail to membership@aloa.org or via fax to 214-819-9736.

CALENDAR

For a complete calendar of events, visit www.aloa.org.

FEBRUARY 2017

Feb. 12
PRP Testing
Ramada Canton
4914 Everhard Road NW, Canton OH
education@aloa.org or
(800) 532-2562, ext. 101

Feb. 20-25
Six-Day Basic Locksmithing
ALOA Training Center
Dallas, TX
education@aloa.org or
(800) 532-2562, ext. 101
Class is also available May 15-20

Feb. 26-28
Campus Fire Safety and Emergency Management Conference/Fire Protection Technology Exposition/ Fire Marshal and Code Enforcement Symposium
Hyatt Regency Hotel, Columbus, OH
www.firecodeexpo.com

MARCH

March 9-11
2017 Midwest Education Seminar & Product Showcase
Hilton Northbrook
2855 Milwaukee Ave, Northbrook, IL 60062
Contact Michelle Lee at
michelle.lee@clarksecurity.com or
(858) 974-5210

March 15-18
IDN-Hardware Sales 2017 Trade Show and Security Conference
Sheraton Detroit Novi Hotel
21111 Haggerty Road, Novi, MI 48375
Contact Ronald Weston, marketing manager at (734) 293-0082 or
Bonnie Weston at (734) 293-0061

March 23-25
H.L. Flake 2017 Trade Show
Houston, TX
travis.howell@hlflake.com;
(800) 231-4105, www.hlflake.com

MAY

May 1-6
SAFETECH
Crowne Plaza Albuquerque
Albuquerque, NM
www.savta.org or (800) 532-2562, ext. 218

May 6-9
Security Leaders Business Conference
Crowne Plaza Albuquerque
Albuquerque, NM
ALOA.org or (800) 532-2562, ext. 218

JULY 2017

July 16-22
ALOA Convention & Security Expo
Donald E. Stephens Convention Center
Rosemont, IL (Chicago area)
ALOA.org or (800) 532-2562

We Need Your Help

Attention, ALOA members: Help us eliminate the ongoing industry problem of scammers by screening the new applicants listed on these pages. If you have questions or concerns about any of the applicants, please contact Kevin Wesley, membership coordinator, at (214) 819-9733, ext. 219, or email kevin@aloa.org.

Get Specialized

Plan your classes now to achieve your specialty CFL credential this year.

We are now into the New Year and with so much to do and so little time in which to get it done! Start planning classes for your certified forensic locksmith (CFL) exam now.

A few updates: The two-day forensics class will be held at SAFETECH in Albuquerque, NM, in May so safe and vault technicians can complete this mandatory requirement for their CFL in Safes and Vaults. Your CFL committee has brought you new CFL certificates to add to or achieve your specialty CFL credential. You can now achieve a CFL credential in Automotive, Architectural Hardware Assemblies, General Investigation, and/or Safes and Vaults. This enables you to be a listed CFL expert in multiple related fields.

If you think a career in forensics is something that interests you, then plan on attending the ALOA Convention & Security Expo in Rosemont, IL (Chicago area) this July, and we'll give you an opportunity to complete specific CFL class requirements at that time. There will be an IAIL division meeting there where you can meet the IAIL Board of Directors and ask questions of the CFLs who do this type of work for a living.

I would like to thank the following CFLs for recertifying in 2016:

Name	Member Number	Credential	Expiration Date
William Boughman	775	CFL	2/20/2019
Jeffrey Lange	259	CFL	3/19/2019
Dennis Lyons	347	CFL	10/2/2019
Stanley Paluski	476	CFL	6/27/2019
Ross Douglas Squire	387	CFL	2/10/2019
Brian VanDenburgh	614	CFL	6/17/2019

The following CFLs will be recertifying this year:

Name	Member Number	Credential	Expiration Date
Thomas Demont	012	CFL	3/10/2017
John Haynes	524	CFL	6/11/2017
Thomas Ware	273	CFL	6/30/2017
Keith Whiting	285	CFL	10/14/2017

We wish all of our CFLs much success with their investigative work and hope that they have a prosperous 2017.

"Your CFL Committee has brought you new CFL certificates to add to or achieve your specialty CFL credential."

Tom Resciniti Demont, AHC, CAI, CFDI, CFL, CMIL, CML, CMST, ICML, IFDI, LSFDI, ARL, President, International Association of Investigative Locksmiths.
IAILPresident@aloa.org

Get Published!

IAIL members: Submit your articles for the Investigative Spotlight department. Send your information to Ross Squire at ross@abcforensic.com.

SAFETECH: Endless Possibilities for Security Professionals

Attend SAFETECH in Albuquerque and remain at the same venue for the Security Leaders Business Conference.

SAFETECH will be here before you know it, and you won't want to miss this year's action-packed event. Join us in Albuquerque, NM, for a week of the industry's best hands-on training, access to the latest products and networking with your peers, manufacturers and distributors. Your opportunities for professional development are endless.

Education

This year, SAFETECH boasts several new classes, including enhanced offerings for beginners through advanced students. Take the new Electronic Safe Lock Servicing class, where Scott Said will give hands-on instruction on installing, programming, troubleshooting and using a variety of opening methods for today's most common electronic safe locks. This class is a MUST if you wish to stay abreast of the technologies in the electronic safe lock field.

For those wanting to get into safe servicing, try out Basic Mechanical Safe Service 101. In this introductory class, you'll be shown the proper way to install and service commonly used mechanical combination safe locks and about frequently encountered problems. Enhance your education with the new Boltwork & Hinge Servicing class, and round it out with the new Drilling Techniques and Vault Lock Servicing class.

If you want to get into the exciting field of forensics, be sure to sign up for the new two-day Forensics for the Safe Technician class. This is a mandatory class for anyone who'd like to become a certified forensic locksmith. It will cover policies and procedures required in forensic locksmithing. This class is subject to a la carte pricing.

In addition to these exciting new offerings, SAFETECH also will have old favorites as well. From Basic Safe Opening and GSA Drill and Repair to Advanced Professional Safe Moving and Safe Moving and Rigging, we'll have something for everyone.

Accommodations

SAVTA has negotiated a value-driven rate of $114 per night at the host hotel, the Crowne Plaza Albuquerque. The cutoff date for reservations is April 3, so act now to secure your room at this guaranteed rate. Hotel guests will enjoy free wireless Internet and complimentary parking. Reservations can be secured by calling the hotel toll free at (877) 859-5095 or the hotel directly at (505) 884-2500. Use the group code SAVTA17 when making your reservation.

Events

As always, SAFETECH will host the

QUICK FACTS

SAFETECH
Classes: May 1-5, 2017
Trade Show: May 6
Albuquerque, NM

Hotel Information
Crowne Plaza Albuquerque
1901 University Boulevard,
Albuquerque, NM 87102
(505) 884-2500
Rate: $114/night with free parking and WiFi for hotel guests
Hotel Reservation Deadline: April 3
Group Code: SAVTA17

Registration
Go to SAVTA.org to register.

Questions?
Contact conventions@aloa.org or call (800) 532-2562 x240

ever-popular Swap Meet and Friends of SAVTA Live Auction where you can find treasures, old and new. Don't miss the Kick-Off Party on Friday night, where you can mingle with your fellow professionals and introduce yourself to industry suppliers.

Albuquerque Fun

While education and networking will be your main focus, your entertainment options at SAFETECH will be endless as well. Albuquerque is not only known for its hot air balloons, but it's also home to other fun outdoor activities such as horseback riding and hiking and has dozens of museums and cultural attractions, from the Indian Pueblo Cultural Center to the Rattlesnake Museum. The cultural center of historic Old Town Albuquerque provides old-world charm as well as shopping and tours.

If you're a fan of the hit TV show "Breaking Bad," take a tour of some of the show's iconic filming locations. To round it out, there are also two casinos in the area for your entertainment,

Stay in Albuquerque for the Security Leaders Business Conference

If you want to learn more about the business side of the industry, stay put in Albuquerque for the Security Leaders Business Conference. Directly following SAFETECH at the same venue, you can double your impact with two conferences in one trip. Taking place May 6-9, the conference gives you the chance to meet one-on-one with business owners, key decision and manufacturers and distributors while learning about the latest business trends and new ideas to move your business and career forward. For more information, go to ALOA.org to the SLBC page.

ALOA CONVENTION & SECURITY EXPO
JULY 16-22, 2017

Don't forget to plan ahead for ALOA 2017 in Rosemont, IL!

Join us for a week of the industry's best instruction, the hottest new industry products at the Security Expo and can't-miss events. This year, we've greatly enhanced our automotive class offerings and have added several other new classes. Look for more information in *Keynotes* soon, or visit www.aloa.org for additional details as they are posted.

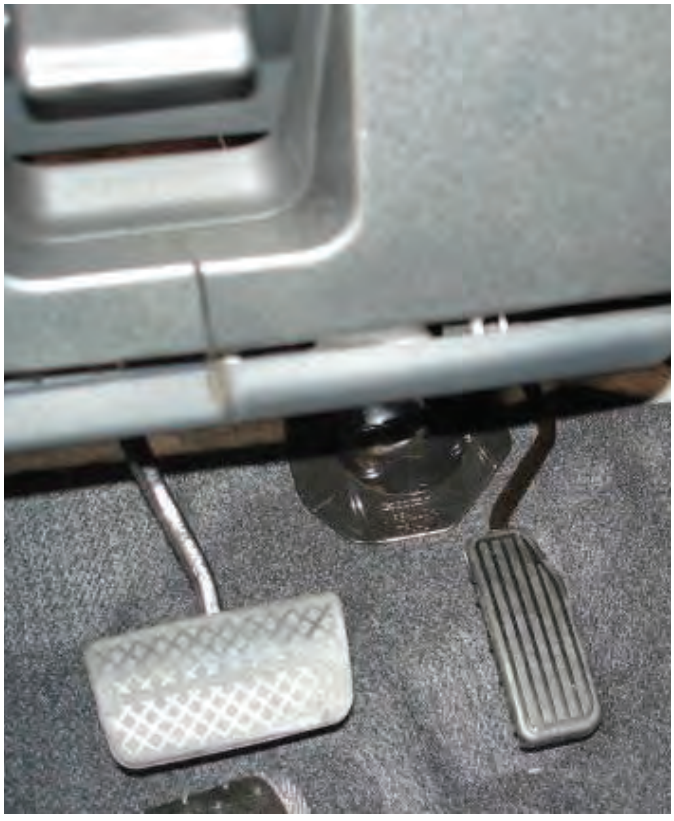


Figure 1. Start with taking the shrouds off, along with a few other things to get to the cylinder. First, we have the lower knee pad here.

Figure 2. Begin by taking it off. It may pop off, or there may be a bolt or two.

Problem-Solving on a Honda Ignition

Stacy Hetchler, CAL, gives a walk-through on repairing a tricky ignition, with some tips to save you from hassles.

This unit, like most of the 2004-plus Honda ignitions, is problematic. In this case, I was repairing the ignition. The customer reported that it quit turning; this is a common issue. When he went to put it back together, he discovered an issue we know you'll run into. So, trying to short-cut the problem-solving for you, we'll break this down.

Figure 3. You can then take the three Phillips screws off. There are two in an obvious place you can see, but there is another sort of hidden up where the steering wheel tilt release sits, as you can see here.

Figure 4. The other two are just up inside the two holes you see. The one on the left is a little deeper than the other. But both are easy to get to. There may or may not be coverings over them.

Figure 5. You should be able to pull forward and up to take this top shroud out of the way.

Figure 6. The lower shroud should also come off and out of the way underneath.

Figure 7. As you can begin to see here, we have several things to get out of the way to get the cylinder out and off.

Figure 8

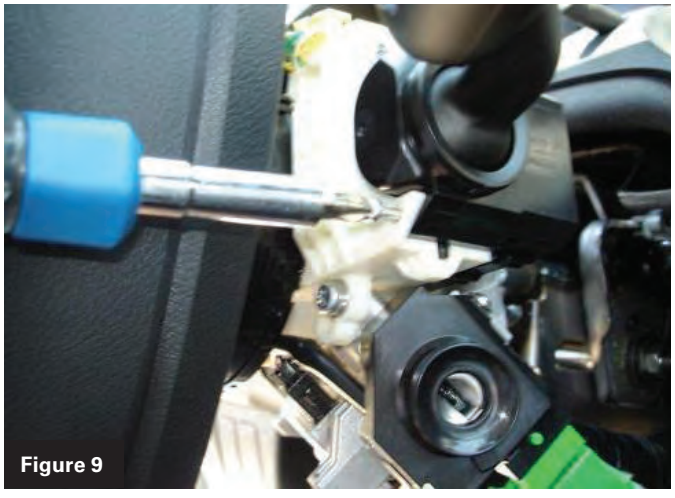


Figure 9

Figures 8-9. The first will be the windshield wiper assembly. This isn't too difficult. There are just a couple of screws facing you: one up and one lower facing you.

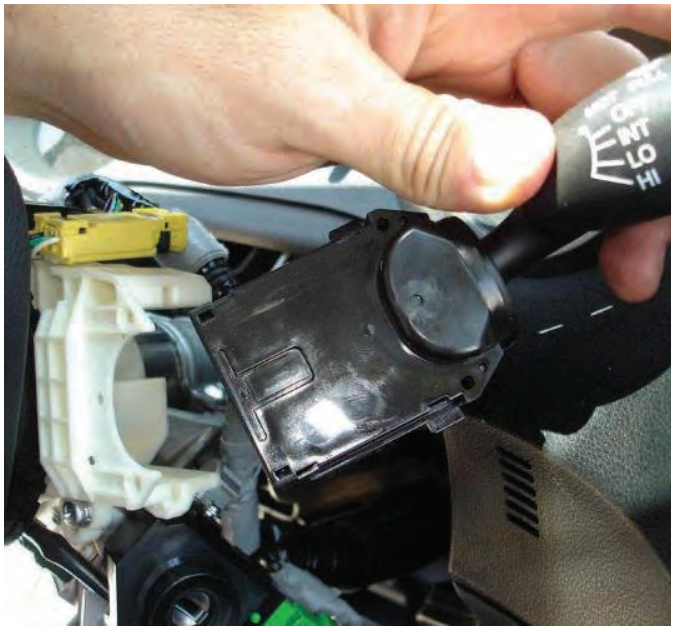


Figure 10. Then you can lift it away from you. I would move it over the top and left to make sure it will not be in your way.

Figure 11

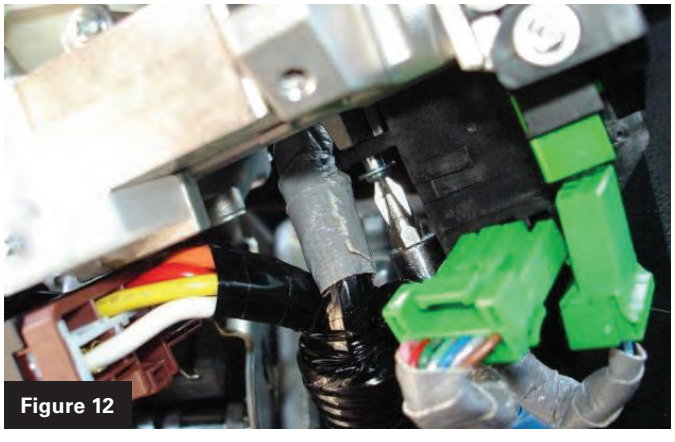


Figure 12

Figures 11-12. Now we'll start working on the transducer coil and light ring (if it has one). The first thing you'll do, as you can see, is to unhook the two green connections by just pushing the release plug.

Figure 13. There will be three screws to get off and then you must remove the two rings around the cylinder you have just unplugged. You can easily move them out of the way so you can work on the cylinder. Here is the transducer information. Please note that if you damage this device, you will have to have a dealer programming tool to synchronize the new coil. So be careful, please.

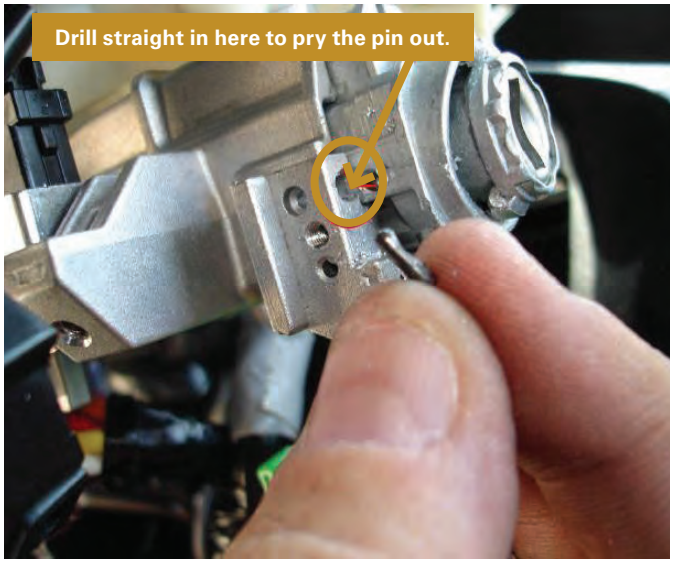


Figure 14. So with almost everything out of the way, you can start to work on the cylinder itself. These are one of the easiest-to-remove cylinders you'll ever run into. There is a small roll pin that holds the cylinder in. Sometimes, if you apply pressure on the cylinder pushing in and then tap, the roll pin will fall out. If not, you can put a spiral key extractor in there and pull it out. There have been a few rare occasions where you'll have to drill into the cylinder wall to remove it. Very rarely this needs to be done. In case it is, here's where you should drill to pry the pin out. Now you can slide the cylinder out to repair, re-pin or replace.

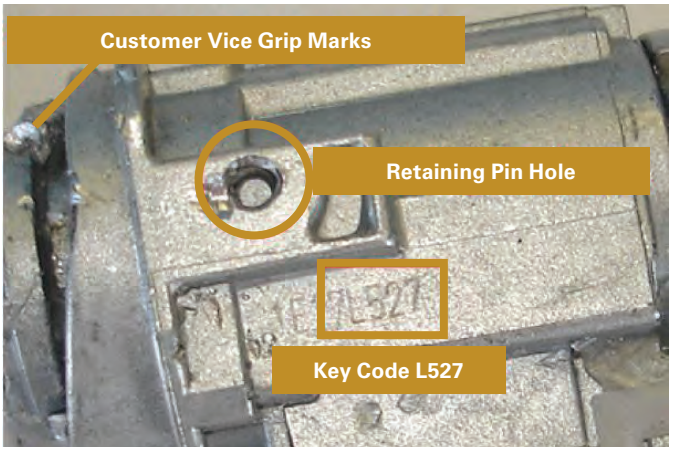


Figure 15. You must always remember that, as cars go, there is probably no other car with a tighter tolerance on the cylinders as Hondas. There is very little room for error. If you do not have the correct wafer in place, it won't work. Also, all the wafers are split wafers. Putting them all in is so much fun!

What you should do when putting the wafers into the door or ignition cylinder is to hold it so the cylinder wafers slide in horizontally. Here, we can see a few interesting things. You have the key code, the retaining pin hold and the customer's marks where he was trying to force it over. Bless their little pea-pickin' hearts!

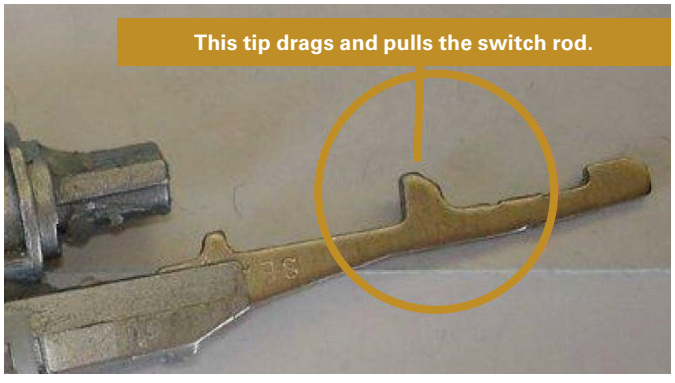


Figure 16. Now, we aren't going to get into taking this cylinder apart, because it's pretty standard. What we are going to do is save you a lot of time and effort, because we found a problem.

Pay attention here, and you'll not have to take it all apart because you put it together wrong! When I took the cylinder out of the housing without a key, the long buzzer tail piece here grabbed the end of the ignition switch rod. So when we put the cylinder back in, the rod did not seat into the switch properly and would engage the switch.

So if you remove a cylinder without a key, there's a chance that this may happen to you. I see no way to lift this piece in the housing and avoid all of this.

If the ignition switch rod has been pulled out toward the cylinder as you removed it, you must push it back in. The only way to do that is to remove the switch from the back of the lock housing, push the lock rod in and then pull the rod toward the left side of the car.

You can test this before you put the lock cylinder back in by taking some needle-nose pliers and trying to turn the switch rod on the cylinder side where you just removed it. If it's hard and doesn't turn, you have pulled that rod out of the switch housing.

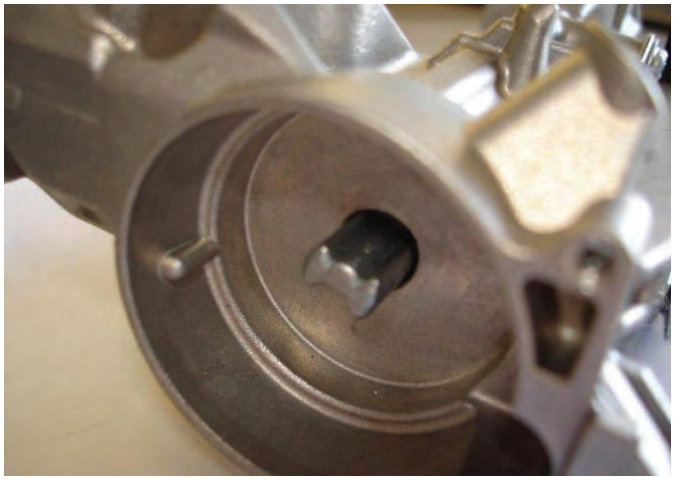


Figure 17. Then, remove the ignition switch from the back side of the housing. It will look like this photo when you do so. You will also have to remove the cylinder housing from the steering column. The only way to pull that rod out is to push down on the steering lock rod, as you see next.

Figure 18. As you push this rod in, you'll pull the switch tailpiece out so that it will seat into the switch housing when you put it back on.

Figure 19. Here, I pushed the steering lock rod in.

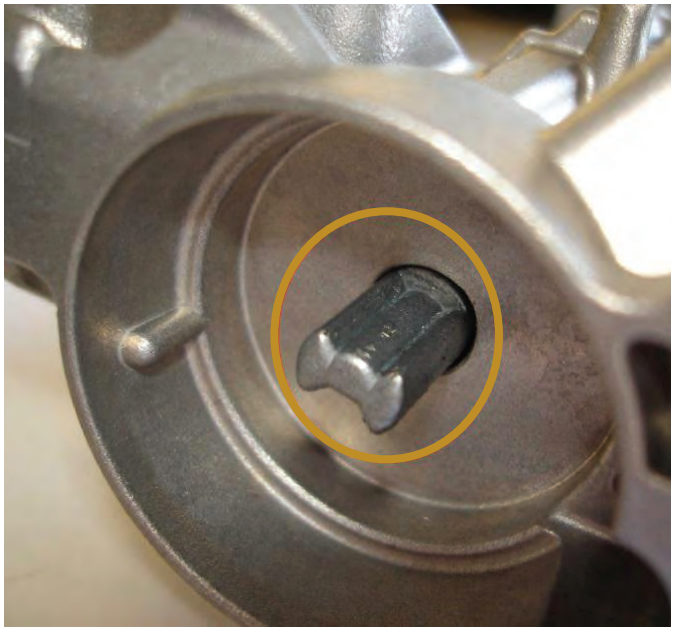


Figure 20. Then, grab this rod in the circle and pull it out toward you. It will then be in the correct position to seat into the ignition switch. Once you've done this, put the switch back on and try to turn it in the cylinder housing area with needle-nose pliers to make sure it turns freely. If so, you've seated it into the correct position.

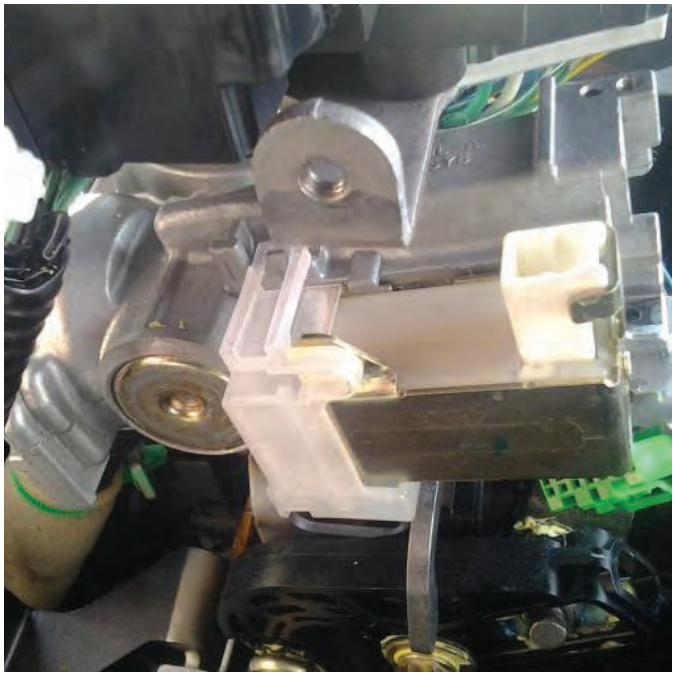


Figure 21. If this should happen to you, another solution rather than take it apart is to use a rare-earth magnet. This photo shows the outside of the cylinder without the magnet attached to it. This is a very strong magnet, so you have to be careful of any magnetic device/card/phone that could be affected by it. As you can see in the next picture, I attached the magnet, and it pulled the tailpiece into the switch.

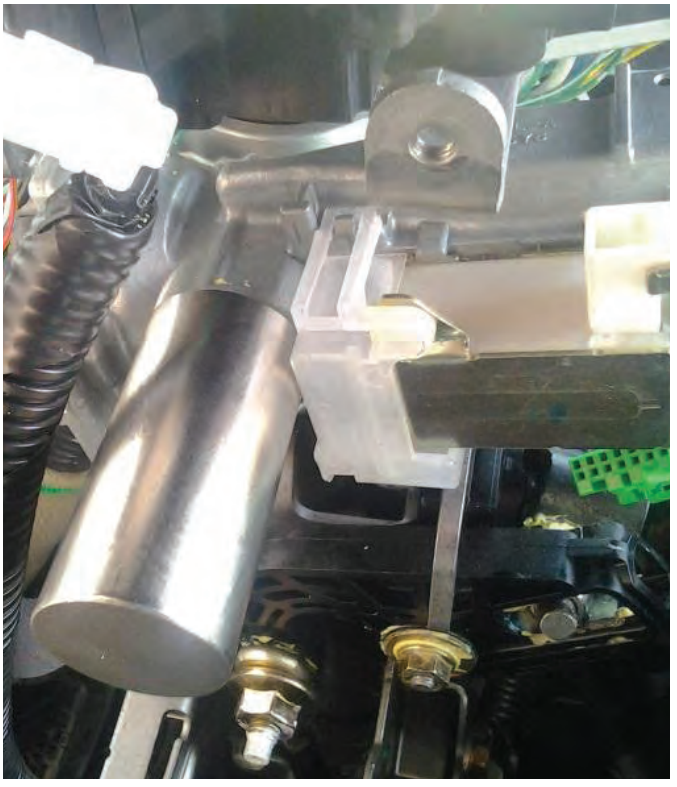


Figure 22. Here I placed the magnet and turned the cylinder to seat the tailpiece into the proper place. Once it worked correctly, we took the magnet off. If you don't do this and you didn't seat the rod into the ignition switch, the key won't turn and you'll be taking this all apart to do it correctly.

This seemed to be an issue only with the Honda Fit, but I would do it with any Honda just to be safe! Being safe is a good thing.

"You must always remember that, as cars go, there is probably no other car with a tighter tolerance on the cylinders as Hondas."

Stacy Hetchler, CAL, has been a locksmith since 1995 in South Central Texas, focusing primarily on the automotive segment. In his limited personal time, he plays soccer and paintball, and flies helicopters while he listens to music. He teaches locksmithing for various associations, including ALOA. He adds, "All proceeds from my work go to my sweet daughter, Khoal, and my little man, Greisun — and of course my great and supporting wife, Candee."

Figure 1. This is a front view of the Expedition safe.

Hold the Phones

When a Browning Prosteel Expedition safe owner can't open the safe, a safecracker armed with a Sargent and Greenleaf booklet opens the safe without drilling any holes.

By **Blaine Lucas, CML, CPS, RST, RAL**

We received a call about a safe that would not open anymore. They said it was a fairly new safe and they had a working combination. We found out it was a Browning Prosteel Safe, an Expedition model with a Sargent and Greenleaf mechanical lock. The problem was stated as the safe stopped working with the proper combination. I loaded up the van and soon arrived at the jobsite.

I try to always ask the customer if they have the combination written down and not just ask for the combination numbers from their memory. One's memory can play tricks, and it is so easy to transpose numbers or even start using the old combination numbers again. They had the combination numbers written down.

A Nice-Looking Safe

From the numbers that were written down, I could see this was a combination for a 3-wheel lock. The wheel count can easily be confirmed. I forgot to take a picture before starting the job so *Figure 1* is the front of the door in the open position. This is a very good-looking safe, nice paint job and great picture on the front.

I like to ask what has changed since the last time the customer opened the safe. If the customer tells me they just changed the combination and now the safe will not open, I would try to find out if a safe tech did this or an inhouse person. Sometimes even an experienced safe tech can use the opening index when setting a new combination and not the changing index. This would change the plan of attack.

This was not the case. If they say the safe was just moved into a new location and it was working fine until then, you should be aware that the dial ring could have been bumped during the move. This issue can be easily fixed by adding or subtracting numbers from the original combination. If the original combination was 20 - 60 - 40, you should try 21 - 61 - 41, 19 - 59 - 39, and so on. When you dial to the drop-in zone, it's a good idea to oscillate the dial — that is, turn the dial quickly between high and low contact points to try and bounce the lever into the gates if the combination is off just a touch.

If the combination is close, this bouncing of the lever on the high and low contact area may cause the lever to drop in. If this was the problem, the safe should open in a few minutes using up to + or - 10 numbers.

Ruling Out Other Problems

They said the safe had not been moved

since they got it. This makes a bumped dial ring less of a chance of being the problem, but does not eliminate it, as something could have been moved near the safe, and that could have bumped the dial ring.

The next thing to check is the dial ring for tightness. If it is loose, you should tape it so it does not move, and then proceed with the same trial combinations as above, adding/subtracting numbers from the original combination.

The dial ring was tight. I started with some dialing diagnostics. The dial turned smoothly with no binding with the opening index at exactly 12 o'clock. I turned the dial at least five turns to the right on stopped at 50; you could choose any number far from the contact area.

A (Related) Side Note About a Gun Safe

On a side note, I once did a warranty job for a safe manufacturer who told me the safe was delivered to the customer and loaded full of guns and locked. Now the safe would not open with the combination that was on the factory card. The customer was walked through the proper dialing technique, yet it still would not open. When I arrived at the jobsite, the customer handed me the factory-printed combination card, which was confirmed with the number the factory gave me, with the correct serial number on it, and he stated that the safe never worked, not even one time.

I was thinking that on a brand new safe, not much could be wrong. I tried the combination many times, adding numbers, subtracting numbers. Nothing was working. I decided to do a wrong count, guessing it might be a stuck fly or some other lock defect. I turned the dial five times left to 50, then started turning the dial right to do a wheel count, and the dial locked up at 95. The lock was unlocked.

"I try to always ask the customer if they have the combination written down and not just ask for the combination numbers from their memory."

Even though the safe had a combination card, it had never been set to the card; the lock was still set on 50. I decided then and there that 50 was a good place to park the wheels for any diagnostic from now on. I might have needlessly drilled this one open if I did not park the wheels at 50. Who would have thought that a brand new safe with a factory combination card was not set on those numbers? I guess the factory goofed on this one. Oh well. The factory is full of people, and people make mistakes. I try the combination of all wheels set on 50 on all locked safes now, even old ones. Well, now back to this safe project.

Back to the Safe Project

I guess this gun safe must have been shipped in the unlocked position for him to get all his guns in it and lock it up without ever having to try the combination. After I dialed five times to 50, I turned the dial back to the contact area (usually around 5 to 15 with a dial splined at 50. Some newer Sargent and Greenleaf dials are splined closer to 40. This would change your contact area).

I could feel both left and right contact points at around 5 and 15 — dial probably splined at 50. No stuck lever. If I could not feel the contact areas, I would dial the lock combination and then turn the dial to the middle of the contact area and rap the front of the safe to try and get the lever to drop in.

Bolt end pressure (somewhat common) or a broken lever spring (I have never seen one) could be possible issues if you could not feel the contact areas. Sometimes bolt end pressure can be released by turning the locking handle toward the closing position or/and rapping the safe door. Many safe doors will have a little play when you pull on the handle of the locked door. A door that seems very tight could have something jammed in the door frame, such as the edge of a money bag or leather strap from a rifle sling. You may need to dial high and low as with a moved or loose dial ring using this tip.

To Everything, Turn

I again turned the dial five turns to the right on stopped at 50 to park all the wheels at 50. Turning at least five turns in the same direction should pick up all the wheels in a 3- or 4-wheel lock. Then I went left to 30 and stopped. I grabbed the dial on, quickly spun to about 60, and could feel the wheel pick up. This process was repeated, and all three wheels picked up at near the same number on the dial — no 4th wheel was felt.

Sometimes an amplifier can help confirm wheel pick up if the wheel pick up contact points are very light. This procedure was repeated, but this time starting left a minimum of five turns with similar results. This confirmed all wheels picking up and no stuck flies. As each wheel is picked up, you should feel slightly greater resistance on each turn. If you do not, you may have an unlocked wheel or broken fly.

If any of you do not have *Dialing Diagnostics* from Sargent and Greenleaf,

Figure 2. This is the opening edge of the safe door, which shows the bolts and labels.

Figure 3

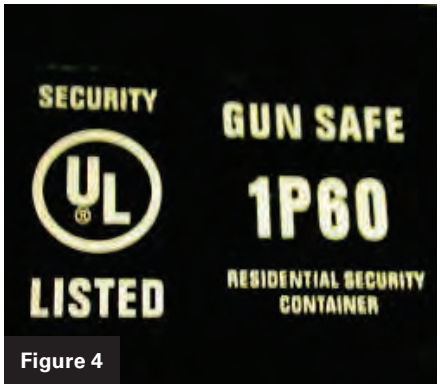


Figure 4

Figures 3-5. The following labels are on the opening edge of the door: Fire label, UL gun safe label and the safety label.

Figure 5

Figure 6. The top bolt is labeled with "Prystop."

be sure to get it as soon as possible. It is available from their website free of charge. They call this "A guide to solving safe lockouts through knowledge, rather than force." You will be able to open many safes without drilling by using the skills you will learn from this booklet. The book says, "80 to 90 percent of all safe lockouts can be overcome without the need to penetrate a safe." Even if you do not get the safe open with this information, you will have more information to plan your lock defeat.

The lock felt as it should, and I could not notice any problems. I then tried the combination several times, and on about the third or fourth try, it felt like the lever dropped in, but it did not unlock. This could be caused by a loose back lock cover allowing the internal relock to stop the lock bolt from retracting. If this was the problem, sometimes you can use a dead blow hammer to bounce the lock cover back on and turn the dial at the same time as the back cover is bounced back on. This is a little like pin-tumbler lock bumping.

The Key Is All in the... Timing

Timing is so important. I played with the dial a little at the drop-in point and then felt the bolt retract and the dial stop at around 95. This should mean that the locking bolt is fully retracted. The locking bolt was retracted and the handle was starting to turn. If you get full safe lock locking bolt retraction and just slightly more handle movement, you probably have a fired external relocker. This condition almost always will require safe drilling to retract the relocker bolt. The handle turned quite a bit and the door started to open.

I try to always have the customer actually open the safe for a number of reasons. With safe door opened, I snapped a picture of the opening edge of the safe door showing bolts and labels *(Figure 2)*. *Figures 3-5* show closeups of the door labels. The fire label *(Figure 3)* states 60 minutes of protection. It has a UL Residential Security Container label (RSC) *(Figure 4)* and the safety label *(Figure 5)* says that you should be aware this safe can be unstable and not allow children to play in the safe.

What's 'Prystop'?

The top bolt was stamped with "Prystop" *(Figure 6)*. What does this mean? When we get the back off we will find out. *Figure 7* shows the back side of the door and all the "treasure" it is securing. Can you guess what kind of store this is? Hint, if you cannot guess, give me a call.

Figure 8 is a closeup of the middle of

Figure 7. The safe was full of phones.

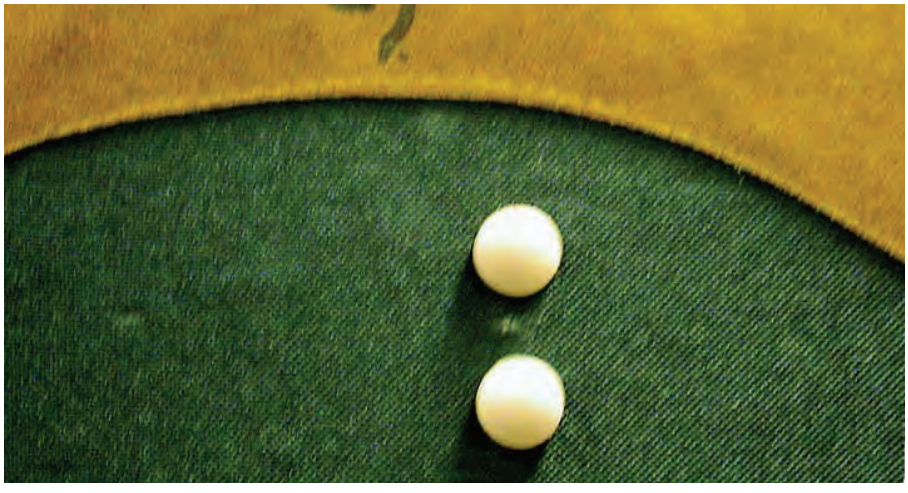


Figure 8. This is a close-up view of two screw caps in the center of the door change key hole, maybe.

the door with two screw buttons hiding two screws. The back panel has two screws holding the panel on in the center of the door? No. Removing the edge screws removes the back panel.

Figure 9 shows the back of the back panel, and we can see that the two center screws hold a re-enforcing plate on the panel. I took these pictures some time ago, and I think the back panel was actually in two pieces, and these screws help hold it together, but it is hard to see in the picture.

With the back panel off the safe door *(Figure 10)* we see that the top and bottom opening edge bolts (both were stamped "Pry-stop") have an extra "L" bracket on them. If someone tries to pry the opening edge of the safe door open, these brackets will make it more difficult to collapse the locking bolts and force the door open.

Figure 9. This is the inside of the back cover.

Figure 10. Here is the back cover removed, showing the full-door view with two-way boltwork, locked.

Figure 11. A close-up of the two-way bolt-work in the unlocked position.

Figure 12. Here, the relocker is not fired.

Figure 13. This shows the external relocker fired. Note the short spring on the relocker bolt. If you could turn the safe upside down, the relocker would unlock itself.

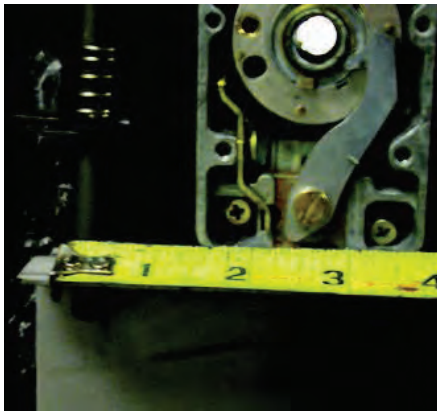


Figure 14. The relock is 2½ inches toward the hinge.

Figure 15. This is a closeup of the door with the bolts in the locked position.

Figure 16. This shows the top locking bolt removed. It's much easier to change the lock with this removed. So now we are at the lock and can see what the problem is.

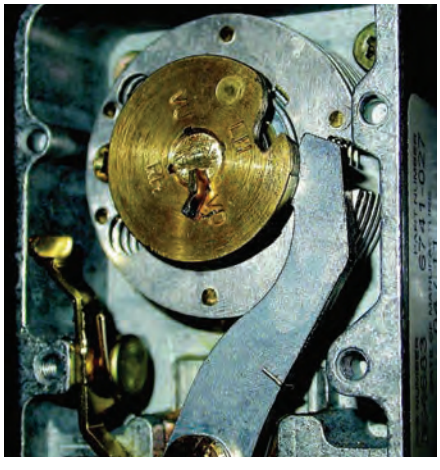


Figure 17. There appears to be enough room for the lever to slip under the drive cam. The spline key is bent also. In a properly adjusted lock, this should not be able to happen. The spindle has backed out of the dial or the drive cam was not threaded on completely.

Figure 11 is a closeup of the two-way bolt-work in the unlocked position. *Figure 12* shows the partially hidden external relocker not fired. *Figure 13* shows the external relocker fired. Note the short spring on the relocker bolt. If you could turn the safe upside down, the relocker would unlock itself. How do you do this when the safe is bolted down? I think I would just drill and lift the relocker up. The relocker is 2½ inches over from the lock center toward the hinge *(Figure 14)*.

Figure 15 is a closeup of the door with the bolts in the locked position. *Figure 16* shows the top locking bolt removed. It is much easier to change the lock with this removed. So now we are at the lock and can see what the problem is. There appears to be enough room for the lever to slip under the drive cam *(Figure 17)*. The spline key is bent also. In a properly installed lock, this should not be able to happen. The spindle has backed out of the dial or the drive cam was not threaded on completely.

The Back Cover, and Beyond!

Let's look at the back cover. In *Figure 18,* we can see a groove being cut into the back cover. I used to use sidecutters to remove spline keys but I cut one too many in half, so I made a puller. I took a standard needle-nose vise grip pliers and replaced the adjusting ¼-20 screw with an extra-long screw with a weight added

Figure 18. Notice the groove being cut into the back cover.

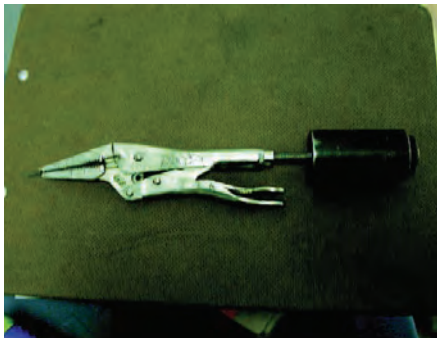


Figure 19. This is a homemade spline key remover

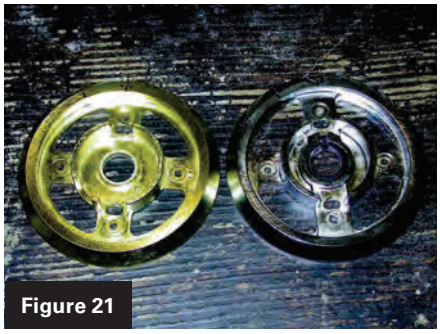
Figure 20. These are the new parts ready to install.

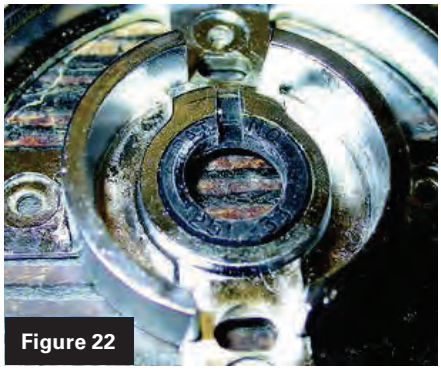
to it. It works much like a dent puller *(Figure 19)*. (This is an old tip that was printed many years ago in one of the trade books.)

Figure 20 shows the replacement lock supplied by the manufacturer. Both old and new locks are Sargent and Greenleaf. *Figures 21-23* show the new and old dial rings. Can you see the difference? In *Figures 21-23*, you'll also see a closeup of the old dial ring; notice the Derlin washer. See the closeup of the new dial ring, no washer/bushing.

I flipped over the new dial and I saw the "Made in China" label *(Figure 24)*. Are there any other differences? Let's look at the dials *(Figure 25)*. The old dial is splined at 50, as is most common *(Figure 26)*. The new dial is splined at about 42 *(Figure 27)*. Since the new dial ring does not have the Derlin bushing built into the dial ring as the old one does, is there any bushing? *Figure 28* shows us the new bushing on the dial. *Figure 29* shows the new lock installed and ready for the dial to be installed.

I like to put the drive cam on the new spindle, screw it down and then measure how much too long it is. Then I remove the drive cam and dial from the safe. I then reinstall the drive cam on the dial spindle past the measured point and cut the spindle to length. This is done with the dial out of the lock. When I unscrew the drive





Figures 21-23. This is a comparison showing the new (gold) dial ring next to the old (silver) one. The old dial ring has the Derlin washer. Also notice that the new dial ring had different center.

Figure 24. When the new dial was flipped over, one can see the "Made in China" label. It's interesting that both dials said "Made in China."

Figure 25. Here, compare the old and new dials.

Figure 26. The old dial is splined at 50.

Figure 27. The new dial is splined at 42.

Figure 28. The new dial ring has a different bearing washer.

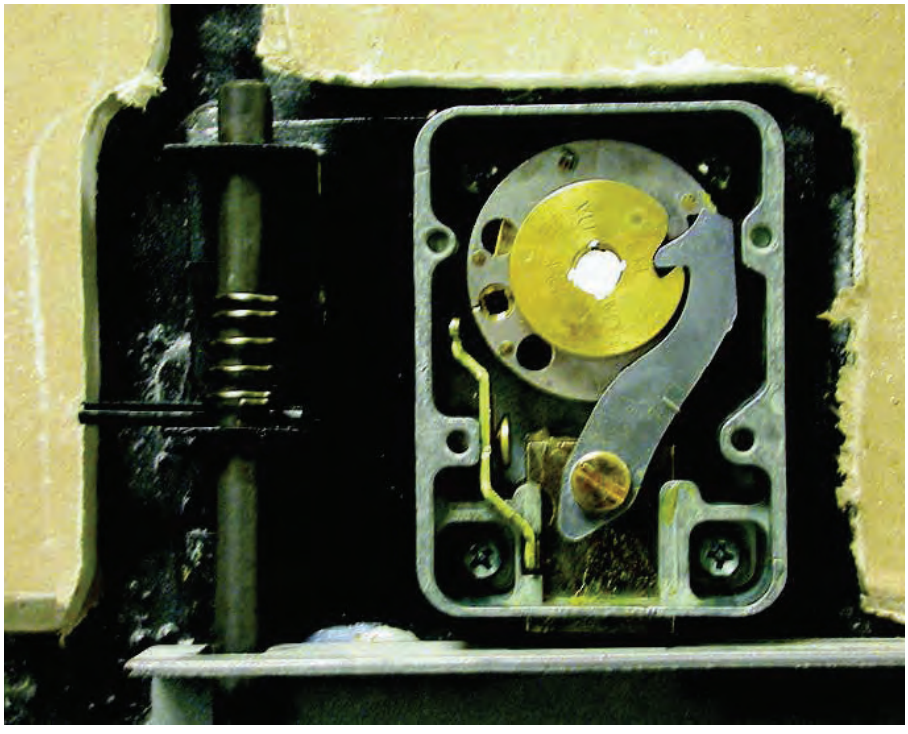


Figure 29. The new lock is installed and ready for the dial.

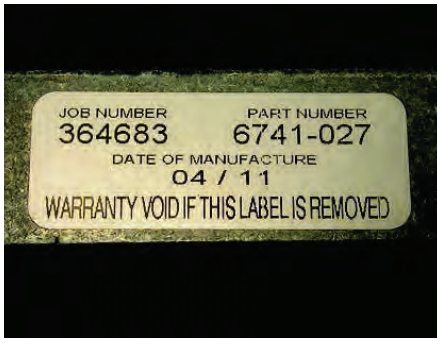


Figure 30. The old lock shows that it was made in April of 2011.

Figure 31. The new lock was made in November of 2011.

cam from the spindle, it self-cleans the spindle treads.

Figure 30 shows manufacturer date of 04-11 for the old lock, and *Figure 31* shows manufacturer date 11-11 for the new lock. This information was on a sticker on the side of the lock body. I installed the new dial with the spindle cut to length and finished installing the new lock. I put everything back together and set the new combination. The owner tried the combination several times before I let him close the door and then I had him try it one more time for the real test.

I always try to lock the safe with the door open so the combination has to work at least once before the door can be closed. The customer could now sell all his "high-security" phones.

Of course, the job is never complete until all the paperwork is finished. I came prepared to drill the locked safe open, but with the help from *Dialing Diagnostics* from Sargent and Greenleaf, I was able to save the time of hauling in all the heavy cases of safe-opening tools, drilling the safe and then repairing the hole. I guess this safe opening would fall into their 80 to 90 percent of opening a locked safe without the need to penetrate the safe body. Sargent and Greenleaf's *Dialing Diagnostics* is part of the book *Mechanical Safe Lock Guide*.

Blaine Lucas, CJS, CML, is a third-generation locksmith and president of Foothill Locksmiths, Inc., which offers security solutions to residential, commercial and automotive customers throughout the East Bay in Hayward, California. Blaine's grandfather founded the company in 1956. Blaine was 12 years old when he started with his grandfather on Saturdays.

PIN EUPHORIA PART II

William M. Lynk, CML, CPS, ICML, M.Ed., continues his discussion of the array of pins and pin kits within the field.

In part two of this article series, the author continues discussing various manufacturers' pin kits.

CCL and National

CCL (Corbin Cabinet Lock) was founded in 1882 in New Britain, CT. The company spent 121 years there before moving to its current location in Wheeling, IL, in 2003. CCL — a division of Corbin Russwin until it sold in 1985 — is a manufacturer and supplier of padlocks, cabinet door locks, desk drawer locks, cam locks, electrical panel board locks, enclosure locks and other specialty lock products. CCL is also known as the originator of the Sesamee brand 4-wheel combination lock. Sesamee combination locks have solid brass internal parts and are available in a variety of styles featuring both solid brass and case hardened steel shackles.

CCL offers two pin tumbler kits. The OLYMP-1 Pin Tumbler Keying Kit (list $200) contains: service tumblers, master tumblers, cams, lock retainers, cylinder nuts, pronged washers, escutcheons, plug nuts, stop cams, tumbler springs and lock washers.

The K420 Laminated Rekeyable Pinning Service Kit (list $400) contains: eight brass BPs, eight steel BPs, three TPs (steel, mushroom and anti-bump), seals, springs, C-clips, bottom plates, screws, cylinder housing, two plugs and two key blanks (10 each).

National Cabinet Lock, now CompX/National, was founded in Rockford, IL, in 1903, and National Lock moved its cabinet lock manufacturing facility to Mauldin,

Figure 1

Figure 2

Figures 1 and 2. CompX/National (formerly National Lock) has two pin tumbler keying kits: the V70P-1 Pin Tumbler Keying Kit and the V70P-2 Pin Tumbler Master Keying Kit.

SC, in 1982. National has always been known for its full product line of security locks, ranging from disc tumbler locks to pin tumbler locks.

The two National pin tumbler keying kits *(see Figures 1 and 2)* are:

V70P-1 Pin Tumbler Keying Kit

- 100 pieces each of 1, 2, 3 and 4 drivers
- 100 pieces each of 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 tumblers
- 250 pieces tumbler springs
- 100 pieces tumbler retainers
- 50 pieces each of C3735 and C3738 plug retainers

V70P-2 Pin Tumbler Master Keying Kit

- 100 pieces each of 2, 3, 4, 5, 6, 7, 8 and 9 master drivers

Both CCL and National are nicely combined in a LAB duo kit for cabinet locks with a .095" pin diameter (LAB LWK095 measuring 14.5" x 8" x 2"). In *Figure 3,* the kit shows CCL pins in black and National pins in red. There is also an excellent pinning block work station built right into the kit. The wooden pinning block is also available as an individual item for locksmith use (LAB LPB001).

BiLock

Perhaps no manufacturer to date has created a key with a more modernistic look and feel than BiLock. By adding high security with a plethora of product line options, one has a versatile locking system that's being used extensively by the gaming and casino industry, as well as in commercial and residential applications.

Brian Preddey, an Australian master locksmith, invented BiLock in the late 1980s to satisfy the unique needs of the casino operators of his country. Tamperproof locks, complete key control and extreme pick resistance were the driving forces for its inception. The BiLock mechanism works on a principle similar to the Medeco 60 series cam locks: a single bottom pin and spring in 12 chambers that operates two parallel sidebars. Voilà, we have BiLock *(Figure 4).*

Figure 3. Both CCL and National are combined in this LAB duo kit for cabinet locks with a .095" pin diameter

The BiLock Factory Authorized Pin Kit (PK-002, plastic, 12" x 6" x 1.5") contains the four standard or "common" pins, as they are called, with the 10 master pins labeled A through K, sidebars, springs and spring retainers *(Figure 5).* Master keying is accomplished by using only the master pins, as necessary (never the common pins and master pins).

Security Pins

LAB offers a small kit only for security pins. The Security Plus Pin Kit (LMDSEC) includes spool pins and serrated pins.

Exactly what is the difference between the main three types of security pins — mushroom pins, spool pins and serrated pins? I'm glad you asked.

A mushroom pin tumbler — usually a top pin — is engineered to resemble a mushroom. It's typically used to increase pick resistance within a cylinder. This means that one end is typically designed to fit the pin width, with the remainder of the length of the pin being much thinner. Imagine a wild mushroom with its cap and you will mentally see the mushroom pin.

A spool pin can be likened to an old-fashioned wooden thread spool. It's de-

Figure 4. The BiLock mechanism works on the principle similar to the Medeco 60 series cam locks: a single bottom pin and spring in 12 chambers that operates two parallel sidebars.

Figure 5. The BiLock Factory Authorized Pin Kit contains the four standard or "common" pins, as they are called, with the ten master pins labeled A through K, sidebars, springs and spring retainers.

Figure 6. LAB offers a small kit only for security pins, the Security Plus Pin Kit (LMDSEC).

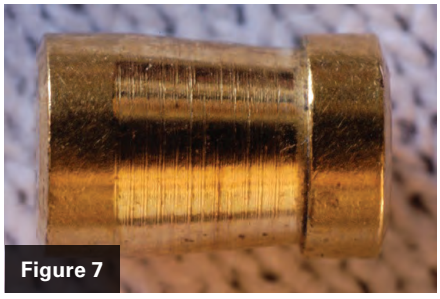


Figure 7

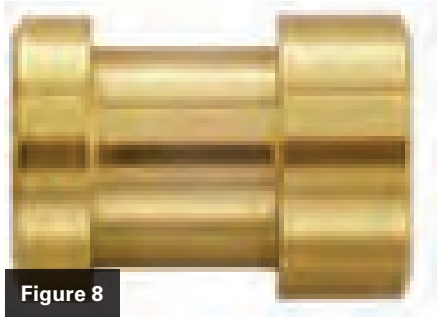


Figure 8

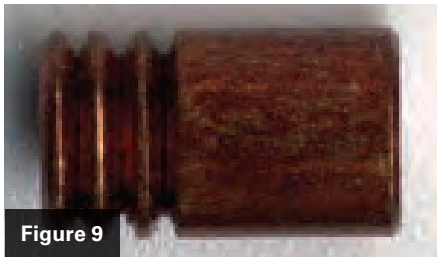


Figure 9

Figures 7-9. A mushroom pin tumbler *(Figure 7)*, usually a top pin, is typically used to increase pick resistance within a cylinder. A spool pin *(Figure 8)* is designed with a uniform smaller diameter except at its ends. A serrated pin *(Figure 9)* is a pin tumbler with V-shaped grooves around its circumference that are also used for pick resistance.

Figure 10. In 1912, Frank E. Best first conceived the interchangeable core, a locking mechanism that would be self-contained from the hardware and could be removed intact with a special key

Figure 11


Figure 12

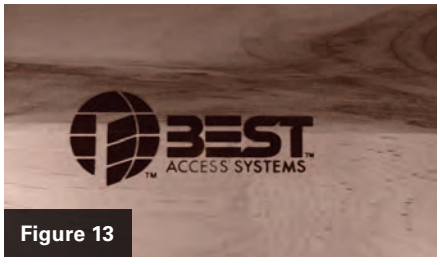


Figure 13

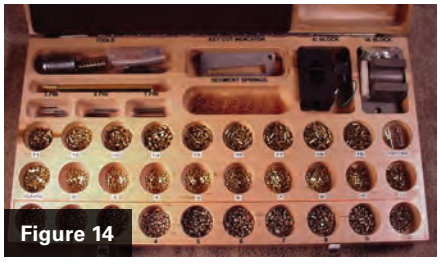


Figure 14

Figure 15


Figure 16

Figures 11-16. BEST has offered several kits over the years, including one with a Formica cover *(Figures 11-12)*, an all-wood case *(Figures 13-14)* and a complete pin kit with all stainless steel pins *(Figures 15-16)*.

signed with a smaller diameter, except at its ends. Imagine that the center part of a wooden spool has been whittled away. That would be the spool pin, typically a top pin used to augment pick resistance but also observed as bottom and master pins.

A serrated pin — a pin tumbler with V-shaped grooves around its circumference — is also used for pick resistance. Many locksmiths feel that the serrated pin is superior to the mushroom or the spool pin in preventing successful picking attempts. The reason is that the multiple V-shaped indentions create more locations for false shear lines to occur, thus thwarting a lock from being picked open. This assertion comes from locksmiths who are adept at picking security cylinders and have done so with mushroom, spool and serrated pins.

There are other variations on these kinds of security pins, some of which can be found in older antique locks. However, these are the three most common security pins that you will encounter in the field.

BEST

In 1912, Frank E. Best first conceived the notion of a locking mechanism that would be self-contained from the hardware and could be removed intact with a special key. Thus, the interchangeable core was born. It has undergone many slight transformations by the numerous manufacturers who have cloned this lock, but it remains essentially the same.

BEST Old and New

Prior to the 1998 name change to BEST Access Systems, BEST used a green logo with its name in a flattened oval. Its earlier pin kit was adorned with a Formica cover and inserts, but the container was wood (CD431, wood, 14" x 7.5" x 2") *(Figures 11-12)*. In 1998, the inner case was slightly redesigned, they lost the For-

mica, a new logo was introduced and a spiffy wooden case was offered (CD431, all wood, 14.5" x 7.75" x 2") *(Figures 13-14)*. But few know that BEST had offered a complete pin kit *(Figures 15-16)* with all stainless steel pins — even wafers! It was all contained in a rich, dark wood case. The stainless steel pins are still sold today. List price on a bag of 100 is $42. To fill an A2 kit, at list price, one would need to shell out $1,218.

LAB came to the rescue to offer a wide variety of SFIC pin kits for the general locksmith, as well as the institutional ones. For the institutional locksmiths who worked with BEST original cores, the LIKIC (11.13" x 8.25" x 3.25"⁄2", metal wedge) was introduced *(Figures 17-18)*. For those who only occasionally pin a variety of SFICs, the LAB "Woody" was offered in three versions (14.5" x 8" x 2"): BWI108 for those desiring color-coded pins, the BWB-108 for those pinning BEST original ICs and the BWF108 for locksmiths desiring nickel-silver and brass pins (non-color-coded) for all SFICs, except BEST originals *(Figure 19)*.

LAB also has available SFIC kits with colored pins in metal box (BFK108, 11.13" x 8.25" x 1.75") *(Figure 20)*, nickel-silver/brass in metal box (NSK108, 11.13" x 8.5" x 3.25"⁄2") and the Mini DUR-X in three varieties: LMDICC-color-coded, LMDOIC-nickel-silver, LMDBIC Best Original *(Figure 21)*, each measuring 7.5" x 4.5" x 1.5".

Notice in *Figure 22* that LAB offers three SFIC bottom pin designs for varying applications. The LAB-BEST design uses an increased flat nose design to give positive key function. This pin uses the BEST bottom pin design specifications. The LAB Original SFIC bottom pin is radiused to a flat transition to decrease key and pin wear. These nickel-silver bottom pins are recommended to be used with Falcon, Schlage Small Format, Medeco

Figure 17

Figure 18

Figures 17 and 18. For the institutional locksmiths who worked with BEST original cores, LAB introduced the LIKIC.

Figure 19. For those who only occasionally pin a variety of SFICs, the LAB "Woody" was offered in three versions.

Figure 20. LAB also makes several SFIC kits, including this metal box with colored pins (BFK108, 11.13" x 8.25" x 1.75").

Figure 21. LAB offers the Mini DUR-X in three varieties: LMDICC-color-coded, LMDOIC-nickel-silver and the LMDBIC Best Original shown here.

"ONE INTERESTING FACT IS THAT THE KWIKSET BOTTOM PIN IS BASICALLY FLAT ON BOTH ENDS!"

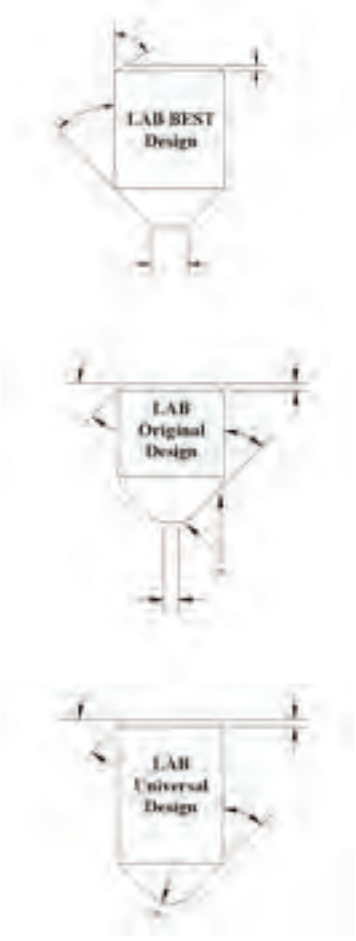


Figure 22. LAB offers three SFIC bottom pin designs for varying applications: LAB-BEST, LAB Original SFIC and LAB Universal.

Figure 23. Although A3 system was discontinued years ago, LAB still offers the A3/A4 combo kit (A3BFK) to maintain existing systems.

Figure 24. The most widely available universal pin kits are the .003" increment and the .005" increment universal pinning kits. LAB offers the .003" increment as the Classic Pro, shown here, and the Wedge Pro.

Figure 25. LAB offers Steel Mini Kits with 81 sizes of pins, including springs.

Figure 26

Figure 27

Figures 26 and 27. The Schlage 40-119 pinning kit (11" x 8.25" x 2") can be used to combinate conventional Schlage cylinders, SFICs, Everest and Primus cylinders.

KeyMark, KSP, etc., other than BEST original cores. Finally, there is the LAB Universal. These SFIC bottom pins use a hardened brass material with a radiused nose design for decreased key insertion forces and are color-coded for ease and accuracy in the field.

Finally, the combo A3/A4 kit (A3BFK, 11.13" x 8.25" x 1.75") is also available from LAB *(Figure 23).* Keep in mind that the A3 system was discontinued years ago based on massive key interchange and core failures, though existing systems are carefully monitored and still maintained.

Universal Kits

To own every pin kit available from a wide variety of lock manufacturers would not only be impractical, but also quite cost prohibitive. For the beginning locksmith who may be unaware of what their locksmithing forte will eventually be — or for the locksmith who may be venturing into other areas of locksmithing — there is a practical solution: universal pin kits.

The most widely available are the .003" increment and the .005" increment universal pinning kits. If choosing only one, the .003" would probably be more versatile. LAB offers these as the Classic Pro (LPK003 & LPK005, 21.63" x 7.88" x 1.63") *(Figure 24)* and the Wedge Pro (EPK003 & EPK005, 21.63" x 7.88" x 2⅞"). They are color-coded for ease of pinning and accuracy. The metal kits utilize a seal-tight

cover, keeping pins where they should be, even when they're being transported. Just don't forget to snap the lids closed! The labels are displayed on both the sides and tops of the compartments for easy viewing at any angle. If you aren't quite sure which of the two increment kits would suit you the best, fear not: mini kits are available.

These are LMK003 and LMK005 (8" x 6" x 11⁄16", metal box) LAB Steel Mini Kits *(Figure 25)*. Each contains 81 sizes of pins, including springs. These are great to have in the van and small enough to fit in your tool kit. They were a godsend when I taught a master keying class in Mexico.

Schlage

The Schlage Lock Company has its corporate roots in San Francisco, but its true origin was in Thuringia, Germany, in the late 1800s. In this small town in central Germany, Walter Reinhold Schlage was known as "The Lock Wizard," a young man with a passion for inventions, adventure and mechanics. Years later, in San Francisco, he designed and produced the first push-button lock centered inside a door knob (KIK) — revolutionary for the time.

Who is Craig Schlage?

Craig Schlage is one of interest, but Walter Schlage sure made his mark on the industry. One thing that his company kept intact over the years was the simplicity in pinning. Even with the advent of many different incarnations of the Schlage locks — from Classic to Everest, Primus and XP — one basic pin kit still exists: the 40-119.

Schlage 40-119

This Schlage pinning kit (11" x 8.25" x 2") can be used to combinate conventional Schlage cylinders, SFICs, Everest and Primus cylinders. There is a separate Schlage Primus pin kit, but if the finger pins are not being changed, the 40-119 will do the trick *(Figures 26-27)*.

It contains: 10 BPs, eight MPs, three TPs, springs, cap pin springs, caps, follower, tweezers, key gauge, shims and cylinder cap removal tool — everything you need to leave your shop employees smiling.

LAB also offers replacement kits for Schlage in a few formats. The SPK115 (blue metal kit, 11.25" x 8.25" x 3"⁄2"), the LSK2N1 (Schlage & Kwikset pins, 11.13" x 8.25" x 3.25"⁄2"), SWK115 (Wood Schlage pin kit, 14.5" x 8" x 2"), LW21SK (Wood kit for Schlage & Kwikset, 14.5" x 8" x 2") and the Mini DUR-X kits

Figure 28. LAB offers several replacement kits for Schlage, including the Mini DUR-X kit LMDSCH shown here.

Figure 29

Figure 30

Figures 29 and 30. The tiny vintage Schlage Wafer Kit is still out there and measures 4.5″ x 3′ x 1″.

Schlage Pin Kits

Pin Kit No.	Description/Contents
40-119	Schlage Standard Pin Kit; for full size conventional cylinders; BPs, MPs, TPs, springs, cap pin springs, caps, follower, tweezers, key gauge, shims and cylinder cap removal tool
40-070	Schlage Primus XP Finger Pin Kit; contains finger pins, sidebars, springs and plug holder
40-129	Schlage SFIC Pin Kit; wooden pin kit for A2 system; contains all pins, springs, key gauge and tweezers
SPK115	LAB Schlage Metal Wedge Rekeying Kit
SWK115	LAB Schlage Wood Rekeying Kit
LSK2N1	LAB Schlage and Kwikset Rekeying Kit
LW21SK	LAB Schlage and Kwikset Wood Rekeying Kit
LIKSW	LAB Schlage and Weiser Institutional Rekeying Kit
LMDSCH	LAB Schlage Mini Durex Rekeying Kit

Figure 31. Schlage offers a variety of pin kits.

LMDSCH (Schlage) and the 3-in-1 Mini DUR-X for LMD3N1 (Schlage, Kwikset & Weiser) *(Figure 28)*. Plenty to go around to suit everyone's tastes.

The Inimitable Schlage Wafer

Finally, to make our adventure even sweeter, the famous (some say infamous) vintage Schlage Wafer Kit is still out there in many shops. Measuring a miniscule 4.5" x 3" x 1", it is a tiny reminiscence of years long past *(Figures 29-30)*. Believe it or not, locksmiths still service these types of wafer locks on small office buildings and homes. Surprisingly, it's the lock of choice in bustling new construction in South America! And to think we stopped testing on it within the ALOA PRP.

Master Lock Co.

In 1921, Harry Soref founded Master Lock Company. In 1935, Master introduced its first combination padlock, the crux of its business. In 1939, Master moved to its current location in suburban Milwaukee, WI. Today, Master is the largest global manufacturer and marketer of padlocks.

Aside from the four pin kits made by Master Lock, LAB offers a Mini DUR-X kit for rekeying their Master padlocks *(Figure 33)*.

Yale

In 1840, in the small town of Newport, NY, Linus Yale, Sr. began the design and manufacture of a series of innovative — later to become monumental — high-security locks.

Figure 32. In 1921, Harry Soref founded Master Lock Company. Today, Master is the largest global manufacturer and marketer of padlocks.

Figure 33. Aside from the four pin kits made by Master Lock, LAB offers a Mini DUR-X kit for rekeying their Master padlocks.

Yale, Yale — The Gang's All Here!

The most common Yale pin kit is the .019" increment pinning system. It consists of 10 increments of bottom pins, seven masters, three top pins and springs. There is no kit for the security cylinders, as they use standard pins and spool pins. However, the rotating side disks and their small springs are included on the list, as they can be easily lost if disassembling the cylinder. The Yale KeyMark pin kit is also listed in *Figure 36* with the LAB Yale Mini DUR-X kit, which is seen in *Figure 35*.

Master Lock Co. Pin Kits

Pin Kit No.	Description/Contents
291	Kit includes all tumbler and driver pins needed to repin Master Lock rekeyable padlocks (not IC or Door Hardware pins though). It also includes several tools to assist in rekeying the cylinder.
8491	Includes all tumblers needed to rekey the Python cylinder plug. It also includes a special keying tool, service keys and a key gauge.
2201	For the 1176 keyway, door hardware; plastic box; 7 BPs, 5 MPs, TPs, driver springs, caps, clips, pin covers, cap tool, tweezers, lever release tool, knob release tool, follower, pin and key gauge
291BS1	Supplemental Bottom Spool Pin Kit (for 1176 keyway); 7 bottom spool pins, driver springs
LMDMAS	LAB Master Lock Co. Mini Durex Rekeying Kit

Figure 34. Master Lock makes four pin kits, and LAB offers a Mini DUR-X kit for Master Lock.

Figure 35. The LAB Yale Mini DUR-X kit is shown here.

Kwikset

In 1946, Adolf Schoepe and Karl Rhinehart revolutionized residential lock design by pioneering a tubular lock named "Kwikset" to underscore its speedy installation. Today, the Kwikset brand is well known by consumers all across the United States with electronic locks throughout the residential market. Its famous architecture has been mimicked and cloned not only throughout the USA, but also worldwide.

Kwikset Keying Kit No. 272

This is the must-have kit (grey metal, 11" x 8" x 2") for those doing a considerable amount of Kwikset *(Figures 37-39)*. The factory kit contains the PK balls (#82208) used in construction keying, usually on new homes in a subdivision. When the new owner first uses their key (different from the construction key), it voids out the use of the construction key by permanently moving the PK balls into a side

Yale Pin Kits

Pin Kit No.	Description/Contents
SK-12 #2980	Yale .019" Step Pin Kit; 10 BPs, 3 drivers, 7 MPs; springs, plug follower and tweezers
SK-13 ##2981	Yale .025" Step Pin Kit; 8 BPs, 3 drivers, 6 MPs, springs, plug follower and tweezers
17-5153-7021,2,3	Rotating Side Disks (Security Cylinders)
17-5153-3001	Rotating Side Disks Tumbler Springs (Security Cylinders)
K918	Yale KeyMark Pin Kit
LMDYLE	LAB Yale Mini Durex Rekeying Kit (.019" Step)

Figure 36. There are a variety of pin kits for Yale.

chamber, never to be heard from or seen again. LAB also has several kits that use Kwikset pins, with either Schlage and/or Weiser. The LAB LMDKWK is shown in *Figure 40.*

One interesting fact to know and tell is that the Kwikset bottom pin is basically flat on both ends! And yet the key still works as it should.

Mul-T-Lock

Mul-T-Lock was founded in 1973 in Israel. The use of the unique telescopic pins is probably what most associate with Mul-T-Lock. Considering the "pin within a pin" concept on one plane, the cylindrical plug on a second plane and the use of side and back pins adding yet another plane, the Mul-T-Lock cylinder is certainly a true three-dimensional locking product. With the high security features of pick resistance and drill resistance, and stringent key control, Mul-T-Lock has aptly chosen the muscleman logo to represent its product lines.

Figures 41-42 (courtesy of Jim Whidden, CPL) show a well-used Mul-T-Lock

Figure 37

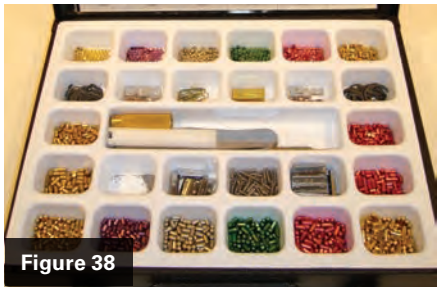


Figure 38

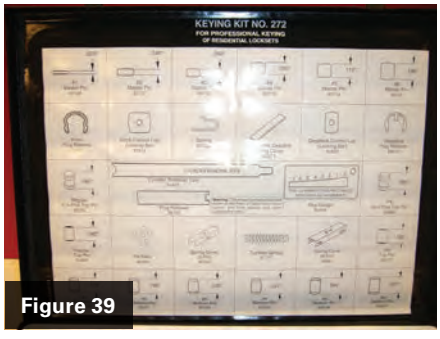


Figure 39

Figures 37-39. Kwikset Keying Kit No. 272 is the must-have kit for those doing a considerable amount of Kwikset work.

Figure 40. LAB has several kits that use Kwikset pins, including the LAB LMDKWK shown here.

Figure 41

Figure 42

Figures 41-42. These photos, courtesy of Jim Whidden, CPL, show a well-used Mul-T-Lock pin kit.

MUL-T-Lock Pin Kits

Part No.	Description/Contents
LST-KITPIN-MT5-DLX	Deluxe MT5 pin kit (25 each plug, master, solid, finger, eccentric and body pins)
LST-KITPIN-MT5-REG	Regular MT5 pin kit (100 each plug, finger, eccentric and body pins)
LST-KITPIN-BOX-MT5	Deluxe MT5 pin kit box with tray (empty)
LST-KITPIN-DLX	Deluxe Interactive+/Classic pin kit (100 each plug, master, solid, and body pins)
LST-KITPIN-REG	Regular Interactive+/Classic pin kit (100 each plug and body pins)
LST-KITPIN-BOX-DLX	Regular/Master/Deluxe Interactive+/Classic Pin kit box with tray (empty)
LST-KITPIN-MINI	Mini Interactive+/Classic pin kit (25 each plug and body pins)
LST-KITPIN-PLG-___	Plug pins refill kit (specify platform)
LST-KITPIN-NTG	Integrator pin kit (100 each plug, master and body pins)
LST-KITCYL	Cylinder maintenance kit mortise/rim/KIK/HD

Figure 43. The available selection of Mul-T-Lock factory kits is listed in this chart.

Figure 44. The Falcon plastic mini kit pictured here can be used for conventional/standard Falcon cylinders.

Figure 45. ASSA was established in 1881 by the blacksmith August Stenman after buying a small hinge manufacturer in the town of Eskilstuna, Sweden. An ASSA LFIC cylinder is shown here.

Figure 46

Figure 47

Figures 46-47. For anyone planning to key or rekey any quantity of ASSA cylinders, the master pin kit is highly recommended.

"TO OWN EVERY PIN KIT AVAILABLE FROM A WIDE VARIETY OF LOCK MANUFACTURERS WOULD NOT ONLY BE IMPRACTICAL, BUT QUITE COST PROHIBITIVE."

pin kit. The other factory kits are listed in *Figure 43*.

Falcon

Falcon Locks began as a spin-off of Weiser Locks in October 1962 in South Gate, CA. In 1997, Ingersoll-Rand purchased Falcon. Today, Falcon is still a product line that's a sister brand to Schlage, and both are under the Allegion umbrella.

The Falcon plastic mini kit (7.5" x 4.5" x 1.5") pictured in *Figure 44* can be used for conventional/standard Falcon cylinders (not SFIC). Notice it has bottom pins 0-9, master wafers 2-9, a cap pin spring, tumbler springs, a plug cap pin and a universal top pin of .186".

ASSA Pin Kits

Part No.	Description/Contents
PK-1 Pin Kit No.1	Full-size standard kit for twin
PK-4 Pin Kit No.4	Mini pin kit for Twin
PK-IC	Pin kit-interchangeable core upgrade
PK-MM	Micro mini pin kit
PK-CAM PK	Cam lock upgrade
MPK	Master pinning kit twin and IC
90720	PK-1 pin kit box only
907205	PK-IC pin kit box IC only
907206	MPK pin kit box only
907207	Micro mini pin kit box only
907208	Pin kit cam lock upgrade box only

Figure 48. This chart shows the available ASSA pin kits.

ASSA

ASSA was established in 1881 by the blacksmith August Stenman after buying a small hinge manufacturer in the town of Eskilstuna, Sweden. One day, his wife embroidered a pillowslip with his name forwards and backwards: August Stenman, Stenman August, and so ASSA became the name of the new company. From those humble beginnings, and with its high-security focus and quality products, ASSA remains one of the premier security manufacturers in the world.

For anyone planning to key or rekey any quantity of ASSA cylinders, the master pin kit (large at 17" x 4" x 2.75") is highly recommended (#MPK). Shown in *Figures 46-47*, it contains all of the pins and elements you will need to service not only their conventional cylinders, but ASSA interchangeable cores as well. Save your pennies; you'll need them, as it's not an inexpensive kit.

Specialty Products & Manufacturing Inc.

Specialty Products & Manufacturing was formed in 1982 and started machining lock tumbler pins in a small 1,200-square-foot facility in Milldale, CT. In 1997, Specialty Products & Manufacturing constructed a new facility in Southington, CT, and increased its line of Escomatic Swiss Screw machines. Some of the industries they service include: security (locks), electronics, automotive, medical and firearms.

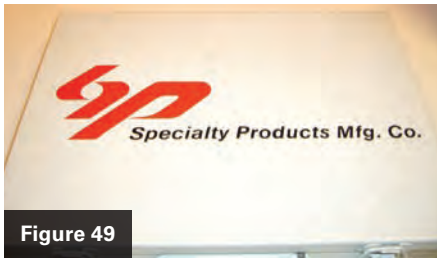


Figure 49

Figure 50


Figure 51

Figures 49-51. Specialty Products & Manufacturing's SFIC A2 pinning kit contains brass color-coded bottom and top pins, springs and tweezers in a metal case *(Figures 49-50)*. Another kit for multi-purposes is the SK-33, a general pin kit using .003" color-coded brass pin, as seen in *Figure 51*.

Figure 52


Figure 53

Figures 52-53. This image shows OEM Manufacturing's vintage ACE metal pin kit.

Pictured in *Figures 49-50* is the SFIC A2 pinning kit (metal, 11" x 8.5" x 1.75"). It contains brass color-coded bottom and top pins, springs and tweezers in a metal case. Another kit for multi-purposes is the SK-33, a general pin kit using .003" color-coded brass pin, as seen in *Figure 51*.

OEM Manufacturing Ltd., Inc.

OEM Manufacturing Ltd., Inc., a privately held company based out of Elmwood Park, NJ, was established in 1979. With a staff of approximately eight, the company was once categorized as a screw machine products manufacturer with annual revenue of $670,000.

At one time, the company manufactured replacement pin kits for .003", .005", automotive, Arrow, SFIC, ACE, Dexter, Chicago, National, Master, Kwikset, Schlage, Sargent, Corbin, Weiser, Yale and Falcon. *Figures 52-53* show its vintage ACE metal pin kit.

It appears that Majestic Lock Company Inc. merged with OEM and the resulting company was categorized under hand and edge tools, with an annual revenue of under $500,000 and a staff of one to four. It's unclear whether OEM is still offering pin kits, as there is no website or e-mail address to verify.

Not Bargain Basement Prices

Pin kits can be pricey. Quite a bit of technical research, precision machinery and quality engineering goes into the design and production of a single pin. *Figure 54* illustrates the various manufacturers' suggested list prices for a few randomly selected pin kits. Keep in mind, distributor prices will be lower and locksmiths can often secure them for even less with working discounts and occasional sales.

Conclusion

Well, we've come to the end of the road on our pin and pin kit journey. We really have covered a wealth of information on pins, their shapes, sizes, design, functions and special quirks. They are not unlike some of the people I know — just a bit quieter. And, I would be remiss not to mention their beautiful homes: pin kits for every occasion, keeping them all nestled together in comfort and serenity. But if you listen carefully, you can still hear the celebrating. You, too, can party

Recent List Prices of Various Pin Kits

Kit	Part No.	List Price
BEST Complete Pin Kit	CD431	$982
ASSA Master Pin Kit	MPK	$1,529.50
Corbin Russwin Large Pin Kit	PK-1070	$765
Schlage, Original Pin Kit	40-119	$360
Mul-T-Lock MT5 Pin Kit	KITPIN-MT5-DLX	$2,754
Medeco Biaxial Pin Kit	K-5006	$1,673
Sargent Signature Pin Kit	437S	$717
Corbin Russwin Access3 Pin Kit	PK-30-MASTER	$1,065

Figure 54. This chart gives the various manufacturers' suggested list prices for a few randomly selected pin kits.

whenever you open a pin kit. Just think of the journey that little piece of metal took to get there and revel upon where it might be going through your gentle guidance.

I am hoping the pin fever you are probably feeling after reading this article will subside without medication. Me, on the other hand? I am experiencing true pin euphoria. I'll be leaving now to go with the little pins to play a game I learned while teaching in Mexico called "Pin the Tailpiece on the Door Key." The real party is just starting. Care to join me?

William M. Lynk, CML, CPS, ICML, M.Ed. has been a locksmith since 1975 and is the owner of www.ICLSglobal.com. Bill is an IC specialist, an industry author, the subject matter expert on IC for ALOA, and an ALOA ACE instructor, teaching classes on interchangeable cores and master keying across the country. He has originated SFIC Technical Manuals for both national and international lock manufacturers, and maintains a working relationship with the major lock and security manufacturers throughout the world. In 2013 and 2015, he was named *Keynotes* Author of the Year.

INSTALLING AN RFID/EAS SYSTEM

Wayne Winton explains how accepting a job a bit outside of his comfort zone paid off well.

What the heck are RFID or EAS systems? The details are readily available via Wikipedia or other sources, but in a nutshell, they're the things that beep if you exit a store and the tag hasn't been deactivated during checkout. We've all heard them before, but not many of us know how they work or how to install them, even though they're a huge part of the security industry. Stores are literally spending *billions* on theft prevention, and they're not spending the bulk of that money on locks; it's on these systems to catch criminals in the act. We all know that investing in layers of security is important, and this is one of those layers.

I received a call to see if I would be willing to bid on installing one of these systems in a very high-end clothing store. I was in the middle of replying "no," but I caught myself mid-sentence. I had a flash thought and quick conversation with myself. "Hmm… maybe this could be a new source of income and a new skill for me to learn. How hard could it be?"

So I started asking questions about what was involved and the total process. Turns out, it didn't sound that bad, with the exception of making a slot 56" x 9" x 56" x 9" rectangle in solid concrete 1" wide x 1½" deep. Oh yes, and *don't make any dust whatsoever!*

So, my brain computes the numbers and the solution, and I responded to the caller. "OK, I'll do it. Here's my price." I bid high enough that I wanted to scare them away, but to my surprise, they gladly agreed. It started to sink in that I was now committed to doing this!

I did the proper research on cutting concrete and how to keep dust down and added a bit of my own thoughts into the mix and came up with a plan. I always look at every job that seems difficult and tell myself, "There is some man or woman doing the same thing somewhere right now, so it can be done. I just need to learn how." The following description and photos will explain exactly how I did just that.


Figure 1


Figure 2

Figure 3

Figures 1-3. The author began measuring his cutouts only after surveying the area and triple-checking his figures.

The Job Begins

Upon arriving to the job site, I surveyed the area and double- and triple-check my installation measurements. Then, only when I was 100% positive of the location, I began measuring my cut out *(see Figures 1-3).* I used a large 4' x 2' square to make sure everything was centered and a perfect square. I crosshatched out the area to be cut to avoid confusion from all the lines laid out. Having a good plan and staying committed to it is the key to a good job. I had never cut concrete in my life, so it was important to stay on track and organized.

I decided to use a cordless 18V Milwaukee 7½" saw equipped with a diamond blade to make my cuts. I'm highly invested in the system, and I had plenty of batteries to keep it turning. I did bring a corded unit just in case, along with a backup blade. So, rigged up and ready to go, I set the cut depth to 1½" *(Figure 4)* — and I had a secret weapon.

Figure 4. The cut depth was 1½".

"THIS WAS THE ONE BIT OF INFORMATION I COULDN'T FIND ONLINE: HOW TO KEEP THE DUST CONTAINED WITHOUT USING WATER."

Figure 5

Figure 6

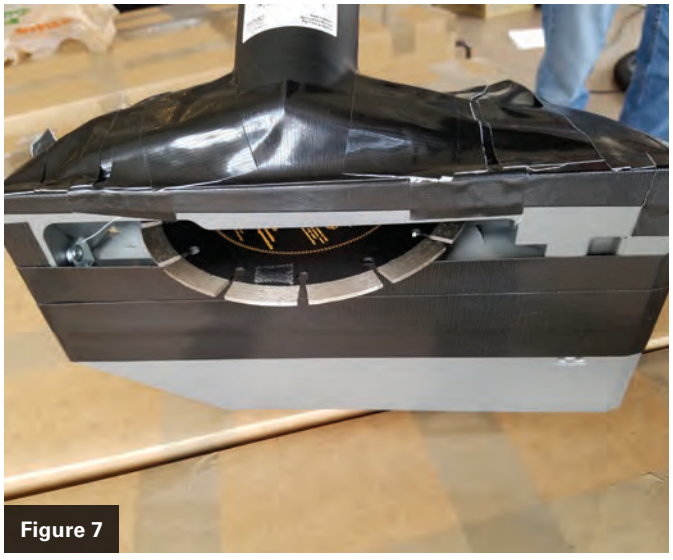


Figure 7

Figure 8

Figure 9

Figures 5-9. To limit dust while working, the author sealed a shop vac attachment to the largest part of the saw and sealed the rest of the openings up with Gorilla tape.

The Secret Weapon

This is the part where I added my own thoughts into the equation. I sealed a shop vac attachment to the largest part of the saw and sealed the rest of the openings up with Gorilla tape to make a tight suction *(Figures 5-9)*. This ensured every bit of dust got sucked into the shop vac and didn't land in the store or on the high-end clothes. This was the one bit of information I couldn't find online: how to keep the dust contained without using water. Water wasn't an option in this location at all, so this was my solution to the problem. You never know if a new untested idea will work until you hit the power button and see your plan in action. It worked flawlessly! Truly not one speck of dust could escape. It's one of the ideas that came together in the field perfectly (that doesn't happen that often). I could hear the shop vac struggling about halfway through, so we took a break, emptied it out and cleaned the filter outside. We examined how the cutting was going *(Figures 10-11)*.

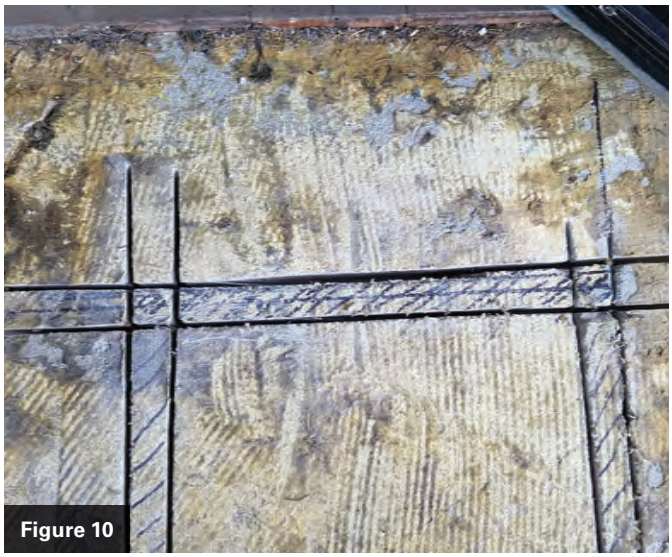


Figure 10


Figure 11

Figures 10-11. Halfway through the cutting, they stopped to check out the progress.

Figure 12. Using an air chisel and the shop vac, the author cleaned out the slot.


Figure 13

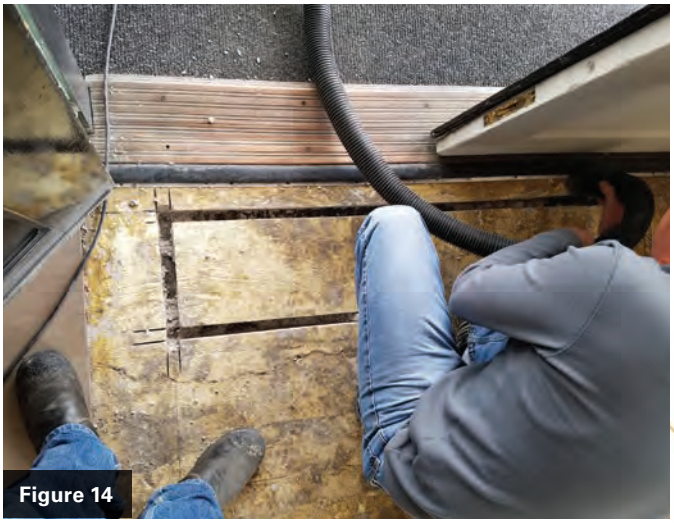


Figure 14

Figures 13-14. The author ensured the slot was the proper depth to fit the wire and plastic conduit while having room to seal it back up in concrete.

Figure 15. The loop fit perfectly without need for further modification.

Figure 16. The wires run over to the wall, where white conduit covers it along the baseboard to the receiver (disguised in a heater vent).

Figure 17. The author needed to cut a hole in the wall to hide the receiver and place the heater vent over it to conceal it.

The Work Continues

After adjusting to cut the lines out as measured and being sure I cut well past the corners to ensure proper depth, it was time to bring out the air compressor. Again, we were faced with the dreaded dust issue.

Using an air chisel *(Figure 12)* with the shop vac hovering over every move, it was time to clean the slot out. This was to ensure it was the proper depth to fit the wire and plastic conduit while having room to seal it back up in concrete *(Figure 13-14)*. After the slot was cleaned out and dust-free, it was time to see if the loop fit. The system is basically a dual copper wire in plastic conduit in a premeasured circle or rectangle, leaving enough wire to run to a computer system that reads the signal when the tag comes within a certain radius.

Figure 18

Figure 19

Figures 18-19. After discovering a false wall, the author cut a larger hole and mounted the system vertically *(Figure 18).* Then, the heater vent was placed to see if it would conceal the unit *(Figure 19).*

I crossed my fingers and really hoped my planning paid off. Success! It fit like a glove, and no further modification was needed *(Figure 15)*. The wires run over to the wall, where white conduit covers it along the baseboard to the receiver (disguised in a heater vent) and then back out to a power source converting the system to low-voltage 12V power. This allowed me to be able to work on it in the first place *(Figure 16).*

I then needed to cut a hole in the wall to hide the receiver and place the heater vent over it to hide it. A spot was measured out and cut *(Figure 17),* but a false wall was discovered; mounting had to be reevaluated. We cut a larger hole, and the system was mounted vertically. *(Figure 18).* Then, the heater vent was placed to see if it would conceal the unit *(Figure 19).*

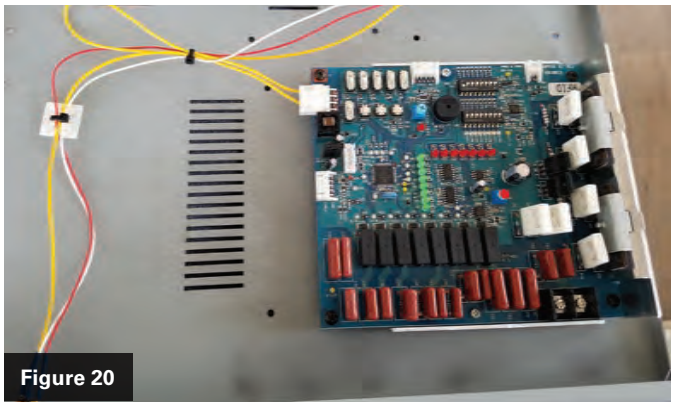


Figure 20

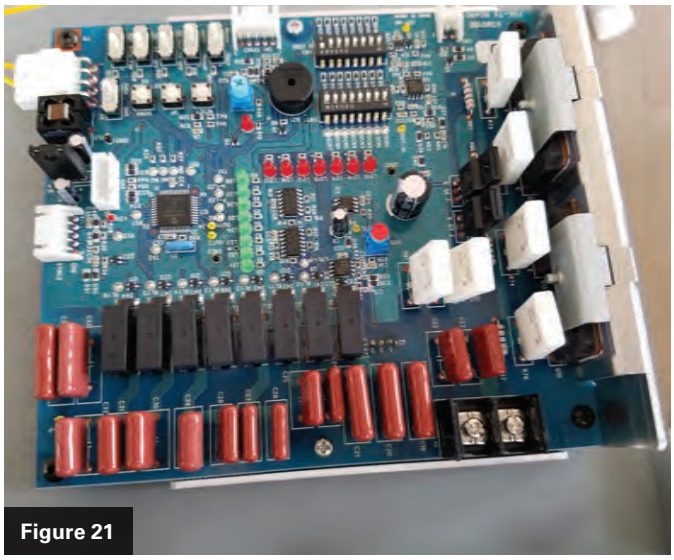


Figure 21

Figures 20-21. To check system functionality and sensitivity, the receiver housing must be opened and the wires attached *(Figure 20).* The knob in the unit adjusts the sensitivity and how far the tag needs to be from the wires in the ground to set off the alarm *(Figure 21).*

Figure 22

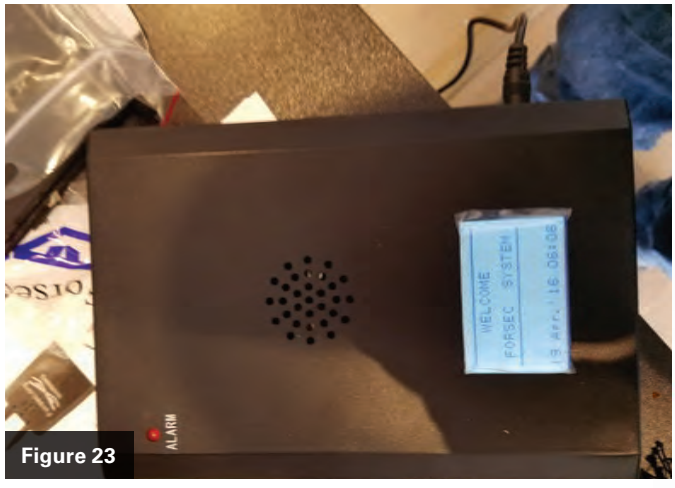


Figure 23

Figures 22-23. The deactivating pad was installed under the desk *(Figure 22)* along with the alarm pad *(Figure 23).*

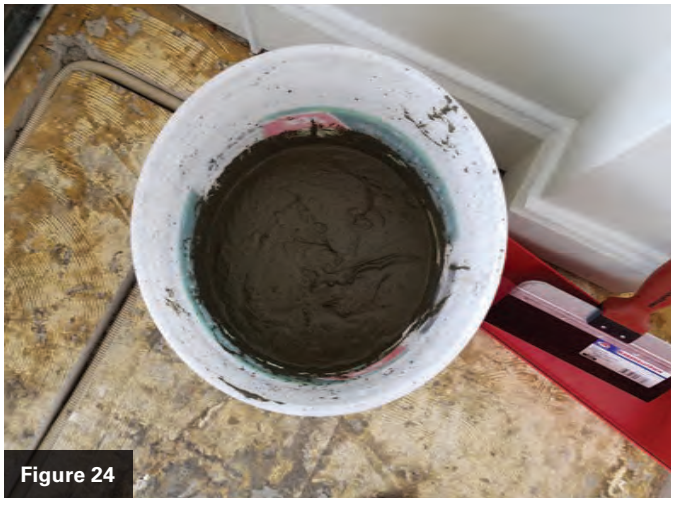
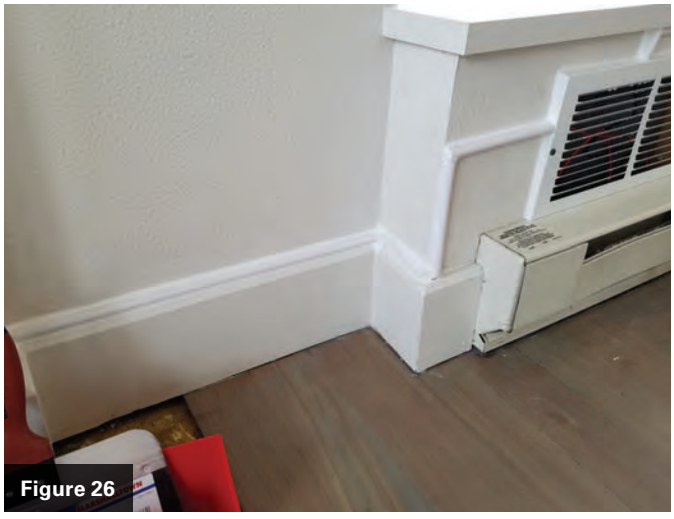


Figure 24

Figure 25

Figures 24-25. The author mixed up some Portland cement to fill in the groove *(Figure 24)* and then troweled the mixture to a smooth finish *(Figure 25).*



Figures 26-27. The install team caulked in the conduit and made it seamless from the floor to the power source.

Figure 28. As a last step, the author replaced the carpet and threshold to hide all of the work.

Then came the really scary part: checking to see if the system worked and setting the sensitivity. For this, the receiver housing must be opened and the wires attached *(Figure 20)*. The knob in the unit adjusts the sensitivity and how far the tag needs to be from the wires in the ground to set off the alarm *(Figure 21)*. Now I'm no tech guru, so tech support for the unit was able to walk me through the process. It was pretty simple, really.

The deactivating pad was installed under the desk *(Figure 22)*, along with the alarm pad *(Figure 23)*. Again, wires were run and disguised under a power strip threshold to provide power to these units — also quite simple. The system was tested repeatedly and screwed down into place.

Wrapping Up

After noting the entire system was working properly, it was time to seal it all up and make my mess look pretty. I mixed up some Portland cement (no rocks) to fill in the groove *(Figure 24)* and then troweled the mixture to a smooth finish *(Figure 25)*. This made it look as if we were never there once the carpet was placed over it. Then, we caulked in all the conduit and made it seamless from the floor to the power source; we made it very professional looking *(Figure 26-27)*. Finally, we replaced the carpet and threshold to make it look like we were never even there *(Figure 28)*.

We received approval from the manager of the store and the company who hired me to do the job, and there was nothing more to do but clean up and pack up tools. This job sounds ultra-complicated, but when broken down into individual tasks, it suddenly becomes much more manageable and simple. Really, the most difficult part of the job was keeping it clean. No one part was actually that difficult or intense.

So, the next time you get a call to try something outside your comfort zone, break it down into pieces and individual tasks, and give it a go. You might be surprised at what you can do — and the price you can charge — when you think outside the box.

Wayne Winton is the owner of Tri County Locksmith Service in Glenwood Springs, CO. He specializes in commercial door and panic hardware along with safe and vault work. He is dedicated to learning every day, putting his skills to the test and sharing information with other industry professionals through vetted video education at wayneslockshop.com. Check it out to see him in action.

ALOA

ALOA Security Professionals Association, Inc.

Membership Application

CANDIDATE PLEASE TYPE OR PRINT

Name: ❑ Mr. ❑ Mrs. ❑ Ms. First_____ Last_____ MI____ Designation_____

Business Name _____

Mailing Address _____

City_____ State_____ Zip Code_____ Country _____

Work Phone_____ Home Phone_____ Fax _____

Email Address_____ Website _____

Date of Birth (required)_____ Place of Birth_____ Social Security # (required)_____

US Citizen? ❑ Yes ❑ No If No, citizen of what country?_____

ALOA occasionally makes its members' addresses (excluding phone numbers and email addresses) available to vendors who provide products and services to the industry. If you prefer not to be included in these lists, please check here: ❑

PROFESSIONAL INFORMATION

Please check the description that best describes you (check all that apply)

❑ Locksmith Owner
❑ Automotive
❑ Employee Technician
❑ Electronic Security
❑ Security Professional
❑ Mechanical Door Locks & Hardware
❑ Institutional
❑ Safes
❑ Investigative
❑ Other _____

Are you licensed to perform Locksmith/Access Control work in your state? ❑ Yes ❑ No If Yes, License # _____

Business License #_____ EIN # _____

Any other license held by applicant (Contractors Lic., Low Voltage) _____

Any other states you do business in and licenses held in those states _____

List all phone numbers used by your company/companies:_____

_____

Number of Employees_____ ❑ Store Front Business ❑ Mobile Only

How did you learn locksmithing/access control? _____

How long have you worked in the locksmithing/security industry?_____

ALOA member Sponsor Name/Who introduced you to ALOA?
Sponsor Name (Required)_____ ALOA Number_____ Years known _____

Have you ever been a member of ALOA before? ❑ Yes ❑ No If Yes, when?_____ ID #, if known_____

Are you a member of any local locksmith association? ❑ Yes ❑ No If Yes, name of association: _____

Give the names and phone numbers of two industry-related references:

Name_____ Company_____ Phone Number _____

Name_____ Company_____ Phone Number _____

IMPORTANT: Have you ever been convicted of a felony? ❑ Yes ❑ No If yes, please give details on a separate sheet.
All convictions are reported to the Advisory Committee for review.

A routine background check is performed on all new applicants, unless you live in a State in which passing a background check is a part of the licensing requirements. Non-US citizen background checks are required. If you live in a country that does not allow third party background checks, you will be required to submit an authentic report upon request (no copies/duplicates allowed) before final membership approval can be granted. A copy of your business permit/license, license number, business card, company letterhead or suitable proof of employment in the locksmith/access control business must accompany application.

TYPES OF MEMBERSHIP AND REQUIREMENTS

Check only one box from the categories listed below:

Active Membership

Persons actively engaged in the locksmith/access control industry for a minimum of two years and have achieved one of ALOA's recognized program designations.

❑ US and US Territories	$235	❑ I elect to Go Green	$215
❑ International	$255	❑ I elect to Go Green	$185

International Association of Investigative Locksmiths Membership

Must be an ALOA Member in order to join the IAIL.

❑ US and US Territories	$50

Probationary Membership

Persons undergoing training to qualify as an Active member, who have not received one of ALOA's recognized program designations.No person shall be a probationary member for more than three years.

❑ US and US Territories	$235	❑ I elect to Go Green	$215
❑ International	$255	❑ I elect to Go Green	$185

Probationary Membership – No Sponsorship Required

Persons undergoing training that are new to the industry and do not know any Active member for sponsorship. Probationary period extended from 90 days to one (1) year. Probationary status lifted if sponsor acquired within year. Must obtain license if residing in State requiring licensure. A second background check will be performed by ALOA after 2 years of the 3 year maximum term. Any violation of ALOA Code of Ethics during probationary period will result in immediate termination of membership.

❑ US and US Territories	$235	❑ I elect to Go Green	$215
❑ International	$255	❑ I elect to Go Green	$185

Allied Membership

Persons whose position in the locksmith/access control industry relates to locksmiths, and cannot qualify for any other class of membership.

❑ US and US Territories	$235	❑ I elect to Go Green	$215
❑ International	$255	❑ I elect to Go Green	$185

Note: Your application will be processed with a 90 day waiting period.
Any institutional locksmith not using his/her work address must submit a letter from employer stating that you are an institutional locksmith.

DUES AND FEES

An application fee and the appropriate dues must accompany the application in order for processing to begin. The dues amount for residents of the US and US Territories include a $30 Legislative Assessment Fee ($205 Dues and $30 Legislative Assessment Fee=$235). Application Fees Schedule:

US and US Territories $70
Canada, Denmark, Ecuador, New Zealand $160
Australia, Bahamas, Barbados, Belgium, Belize, Bermuda, China, France, Haiti, Philippines, UK $210
Israel, Korea, Papua New Guinea, Saudi Arabia, United Arab Emirates $360
Applicants from countries not listed must submit background check and report from local Law Enforcement with application.

FINAL CHECKLIST

❑ Required Proof of Employment in Industry
❑ Annual Dues Amount _____
❑ Application Fee _____
Total Amount Due _____

METHOD OF PAYMENT

❑ Check ❑ MasterCard ❑ Visa ❑ American Express ❑ Discover

Card Number_____ Expiration Date_____ SEC _____

Print Name on Card_____

Signature_____ Date_____

I understand and consent that in the course of reviewing this application ALOA may review publically available information for the purpose of verifying the information submitted and do a background check.

I certify that all statements are true and, if accepted as a member, I agree to abide by the rules, regulations, and Bylaws of ALOA, and further agree to adopt the Code of Ethics of ALOA as my own, and adhere to it to the best of my ability. Should my membership be discontinued, I agree to return my membership card and cease use of all ALOA insignia.

_____

Signature Date Signed

Dues, Contributions, Gifts are not deductible as charitable contributions for Federal income tax purposes. Dues payments are deductible as an ordinary and necessary business expense. However, please note that the Legislative Assessment Fee and donations made to the Legislative Action Network ARE NOT deductible as a charitable gift or business expense.

Return to:

ALOA, 3500 Easy Street, Dallas, TX 75247
Fax (214) 819-9736 • Email: membership @aloa.org

Revised 11/10/16


Figure 1

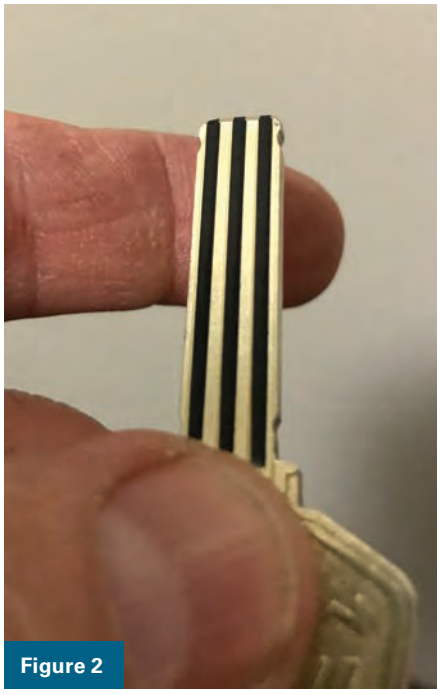


Figure 2

Figures 1-2. The system was made by Marlok. These photos show one of the keys.

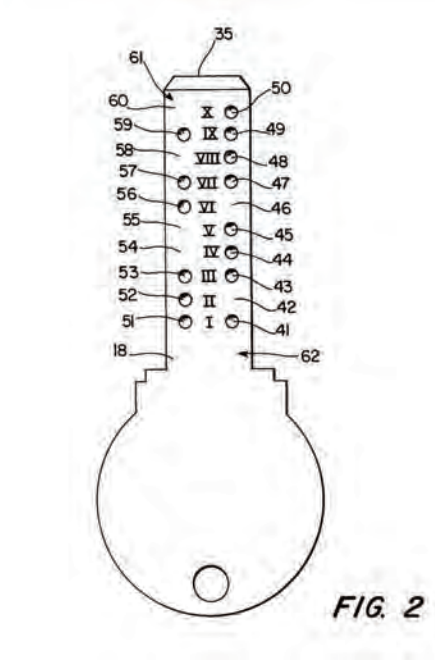


Figure 3. This is a diagram of the possible places those holes might be drilled.

Red Light... Green Light!

Tony Wiersielis, CPL, CFDI, shows an older access control system and the steps he took to replace it.

This month, I'd like to show something you may never get a chance to see anywhere else: an antiquated access control system that I believe is no longer available. In addition, I'll take you through the steps for installing the Best IDH MAX mortise lock that took its place.

The old system was made by Marlok and was installed on transient rooms at a research center in New York City. *Figures 1 and 2* show one of the keys. You can't see them, but there are tiny holes in the black plastic lines. *Figure 3* is a diagram of the possible places those holes might be drilled.

The key is inserted in the cylinder and infrared light is projected onto it. Light passes through the holes, and if the orientation of those holes matches a valid code, the red cylinder light turns green and the cylinder will turn. Obviously, if it doesn't match, the key won't turn. The only electrified part of this system is the cylinder, as you'll soon see.

This system is wired to a central database, and the cylinder is always powered: red light for locked, green for open. Apparently there's no provision for a power outage; if the key can't be read, it won't turn. Hence, no ability to override as you'd find in most other electrified locks. I'm guessing there may be a limited amount of battery backup for the system at the control panels in the event both outside power and backup generators both fail.

One of the problems that caused the demise of this technology appears to be the requirement that the key be absolutely clean for the light to pass through the holes. It seems that dirt on the key, even a thin film of it, would impede operation and possibly damage the cylinder.

Taking It Apart

I'm going to go through the disassembly procedure because there's a trick to removing the cylinder that isn't quite what you'd expect. If you try to turn out the cylinder, there's a good chance you'll damage it. You'll understand why in a moment.

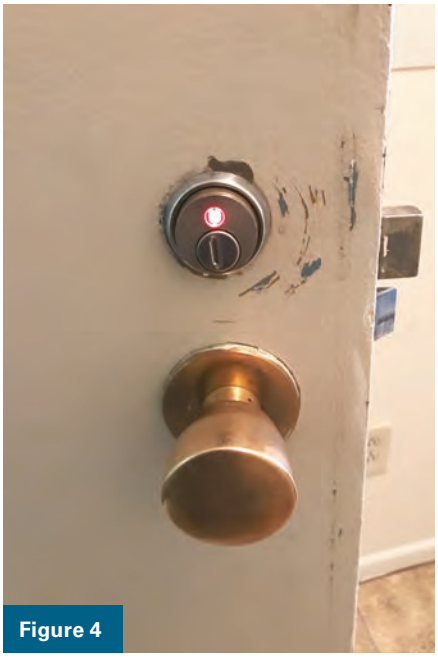


Figure 4

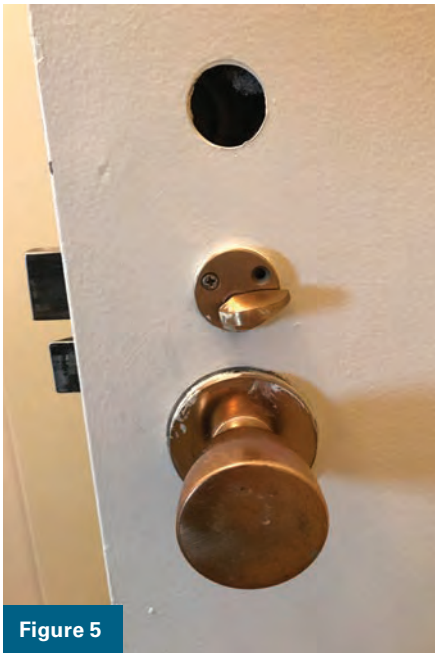


Figure 5

Figures 4 and 5. These photos show the front and back of the lock. This system is installed on older Corbin mortise locks. You can see an extra hole on the inside above the thumbturn. It doesn't line up with the cylinder hole or anything else and has nothing to do with the lock as far as I can see. All the other doors had filler plates installed.

Figures 4 and 5 are the only pictures I have of the full front and back of the lock. There is a scalp plate missing from the face of the cylinder in *Figure 4.*


Figure 6


Figure 7

Figures 6 and 7. These photos show an intact cylinder from another lock with the scalp plate on and removed. The scalp is removed by gently prying with a small screwdriver on the back until you can pull it off.

Figure 8. Next, loosen the cylinder set screw as in any other mortise lock. However, do not try to unscrew the cylinder yet. This is where you can cause damage if you don't do it correctly. Loosening the setscrew will allow you to gently pull the cylinder out of the door rather than unscrew it.

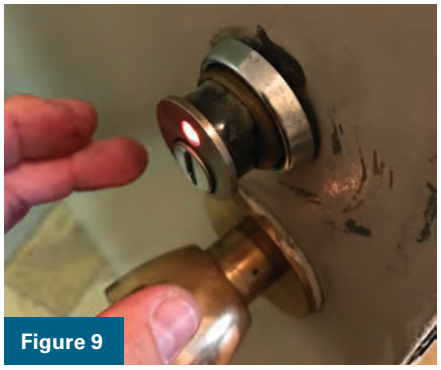


Figure 9

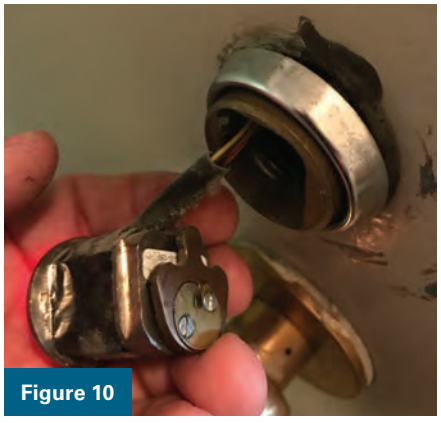


Figure 10

Figures 9-10. In *Figure 9*, I've pulled the cylinder partially out of its housing, and in *Figure 10*, the cylinder is out.

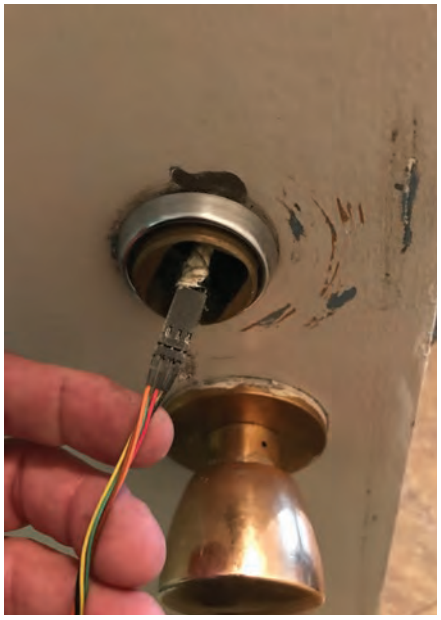
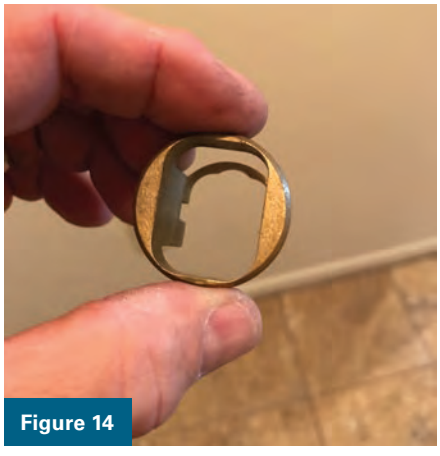


Figure 11. Here, you can see the wire connector attached to the pigtail on the cylinder. Take a close look at the threaded cylinder housing: loose but still threaded in.

Figure 12. This is my finger, pushing the wire and connector out the top of the cylinder housing so I can unscrew it.



Figures 13 and 14. These images show the removed housing.

Figures 15 and 16. These photos show how the cylinder and wire fit into it when both are installed in the door.

Figure 17. This poke hole on the knob allows you to depress the spring-loaded pin, visible above it, to remove the inside knob.

Figure 18. Here, I'm turning the rosette off. This one was hand tight. If it isn't, use a spanner wrench to remove it.

Figure 19. In this photo, I'm turning a knurled nut that is threaded onto the end of the spindle on the inside. Once removed, you can pull out the outside knob and spindle. After that, disassembly is pretty much the same as any other mortise lock.

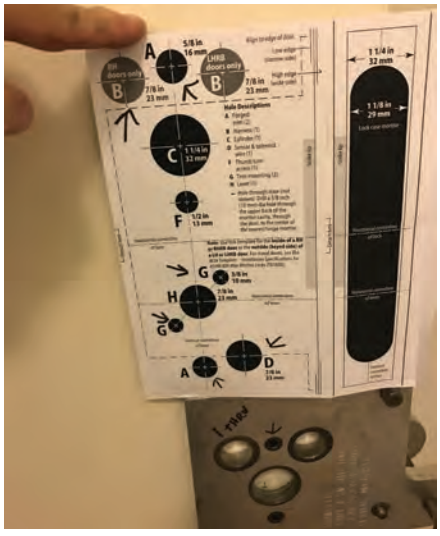


Figure 20. This is a shot of a cardboard template above my jig, which is already in place and tightened. I've drawn arrows to the holes I'll need for this door, which is right hand. This shows the holes needed on the inside of the door. Look at the "D" hole; this is the only hole of those I marked that doesn't go through the door. The wires that pass through this hole will connect to others that will pass through the "B" hole, as you'll see later.

Figure 21. On the jig, the top and bottom "A" holes are 1/4" pilot holes and need to be enlarged after the jig is removed. An important part of drilling the new holes is keeping the old cable that's still in the mortise pocket out of the way of your bits and saws. Forgetting to do this can make a fairly easy job miserable in short order if you mangle the wire. I avoid this by tucking the cable up into the pocket on the opposite side from where I'm drilling. Sometimes I tape it in place if I can.

Figure 22. This is the top of the inside backplate. You can see the brown connector at the top. This will be connected to the old cable.

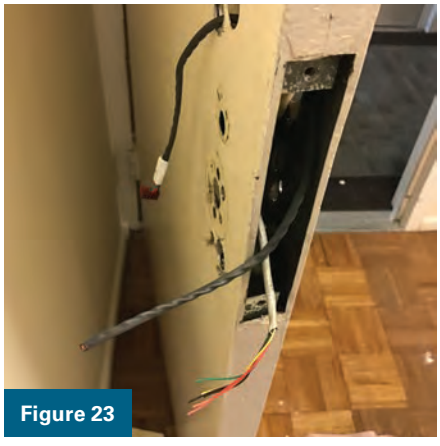


Figure 23

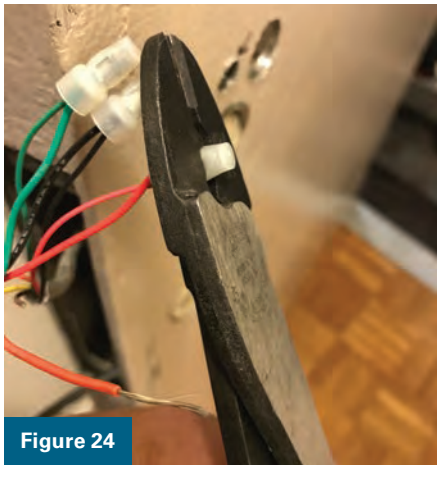


Figure 24

Figures 23-24. In *Figure 23*, I've removed the connector and fed it through the "B" hole on the inside. I've also cut off some of the wire because it's about 4 feet long out of the box to reach the hinge if needed; I don't need that much wire. Below it is the old cable already stripped back, and in *Figure 24*, I'm crimping the connectors.

Prepping the Door

Now I'm going to prep the door for the new electrified lock. I'm installing a Best IDH MAX mortise lock with a prox card reader on its outside trim. This is going to use the existing cable that is already run through an electrified hinge to the mortise pocket. This cable will supply positive and negative as well as clock and data.

Before I go further, I want to tell you a little more about this lock. IDH MAX is available in either mortise or cylindrical and either prox card or mag stripe, depending on customer needs. In this case, it's being integrated into the customer's existing access control system.

The beauty of this design is that rather than using multiple parts and wire runs for your access control, everything you need is self-contained within the lockset. No need for separate electric strikes, door contacts, RQE devices or readers and all the labor that entails.

I'll go through the basic prep and installation, including connecting to the existing cable. On this job, I had an access control person from the building working with me. He cut power to the cable before I spliced and brought the new lock online when I completed each door.

"The beauty of this design is that rather than using multiple parts and wire runs for your access control, everything you need is self-contained within the lockset."

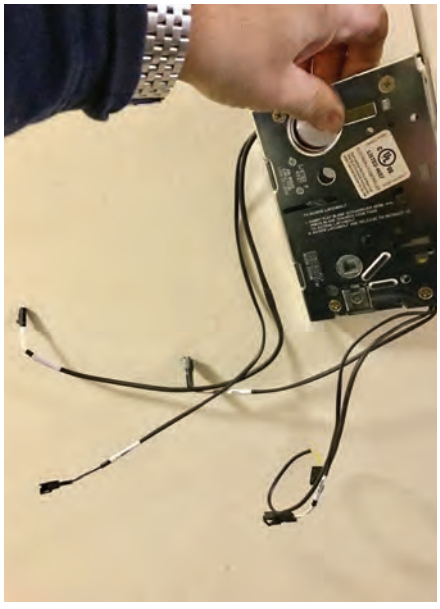


Figure 25. This photo shows the chassis of the lock. The top two wires will be fed through the "B" hole to the inside of the door. There are three wires on the bottom, but only two will be used. The leftover wire can be left in the mortise pocket, out of the way; don't cut it off.

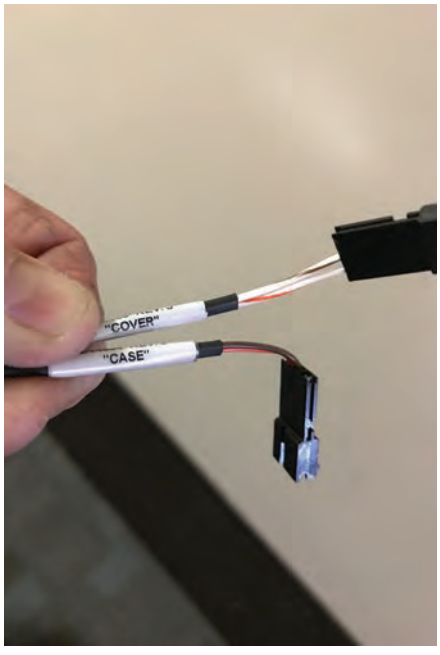


Figure 26. This image shows the RQE wires marked "cover" and "case." This refers to which side of the chassis faces the inside of the door and orients the RQE. If the chassis cover faces inside, use the "cover" and vice versa if the case faces inside. Incidentally, this applies to any Best mortise lock that has an RQE.

Figures 27-28. *Figure 27* shows the chassis wires and the brown connector fed through the door. Take note of the white part visible above the latch; that's the door contact switch. It lines up with the round magnet you see inside the strike box in *Figure 28*.

Figures 29-30. *Figure 29* is the back of the outside trim. That wire harness on the left will also pass through the "B" hole through the black wire protector in *Figure 30*. Note the unusual design of the cylinder. The face of the core will fit into the figure eight you see in *Figure 29*, and you want it to be flush with the trim and not too deep. Don't tighten the setscrew until you put on the trim. Once you have, put in the outside lever and spindle to help hold the trim on.


Figure 31


Figure 32

Figures 31-32. Feed the wire harnesses through the hole in the back plate that lines up with the "B" hole as in *Figure 31* and screw the back plate into the studs on the outside trim *(Figure 32)*, taking care not to compress the door so much that the spring cage for the spindle doesn't loosen.

Figure 33. Connect the brown power connector and the white connector from the outside trim to the circuit board. The rest of the wires will connect color to color and will fit below the circuit board on the back plate.

Figure 34. I've already screwed on the bottom cover and inside lever and now I'm sliding the top cover down over the wires, taking care not to cut any of them. The lock is ready to be added into the access control system.


Figure 35


Figure 36

Figures 35-36. This is something I use to make a job like this easier. It's called a Wedge-It and is sold to first responders as a quick means to hold a door open when necessary. The second picture shows how the U-shaped cutout fits over the hinge knuckle and keeps it in place even if you open the door a little more. This is very handy for an installation like this where there are wires that can be damaged if the door closes on them. How many times have you screwed in a mortise chassis and accidentally let the door close without the knob or lever? Not likely to happen with this tool. It can also lay on its side and act as a door wedge.

Google "Wedge-It" and you'll find them for about $9 each. I have three of them, and I recommend you do the same so you can work on multiple doors. Just remember not to push the door shut with one in place.

Tony Wiersielis, CPL, CFDI, has more than a quarter century of experience and has worked in most phase of the trade throughout the New York metropolitan area. He was named *Keynotes* Author of the Year for 2016.

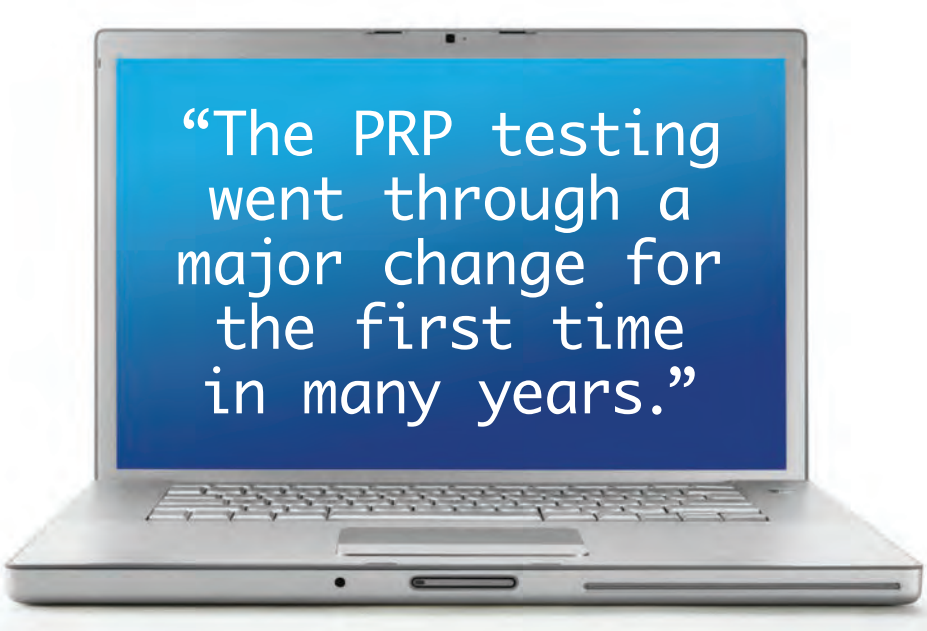
New Year, New Stuff and Things

Jim Hancock, CML, CMST, discusses changes for ALOA Education in 2017.

If you're a "Walking Dead" fan, you understand the reference in the article title. If not, then any future references to Negan or the Hilltop will be useless to you as well, so I won't use those at this point.

As has happened every year for the past few years, we're making some changes in the Education and Certification department at ALOA in hopes of improving education quality and developing certifications that fit the needs of the modern locksmith/security professional. Without any huge production or fanfare, here are the major changes on the horizon that we either have instituted or are working on for 2017.

- The PRP testing went through a major change for the first time in many years. Testing was completely shut down for several months while the tests were updated and enhanced. This will hopefully make testing more relevant and the credentials mean more to both the individuals passing the test and the general public at some point.
- If you haven't received the word, there is now a practice exam available online for the PRP testing. This practice exam consists of questions in the same spirit of those on the standard PRP mandatory exam, and more questions are being added often. The best part is that you can take this test in the comfort of your own home or office — or anywhere you can get to the ALOA website and sign up for it.
- To help make the credentials mean more to the general public, several articles have been submitted to national publications in hopes that they'll print these articles and give the public more insight into locksmithing, ALOA members and, more specifically, anyone carrying an ALOA credential.
- There are a few new credentials to be earned as well. We have introduced the Certified Master Automotive Locksmith (CMAL) to complement our existing CAL credential, with the CAL being more relevant to today's automotive locksmith while the CMAL encompasses not only new automotive technology but also delves into older vehicles as well.
- Along with the new CAL and CMAL credentials will be an entirely new track of classes and attitude toward the automotive locksmith. Updated and new classes as well as a learning track that will get you to the CAL credential are just a few of the things in the works.
- Certifications for the electronics field: We have developed the Certified Electronics Locksmith (CEL) and the Certified Master Electronics Locksmith (CMEL). Much like the automotive credentials, there will be a new education track to get you to the CEL credential testing and updated, more hands-on classes.
- A new credential for the institutional division, the Certified Institutional Shop Manager (CISM), will also have a few classes as well as a test procedure to obtain this rating.
- The Fundamentals of Locksmith class offered in Dallas at the Training Center will be expanded to add subject matter more relevant to today's lock world.
- Along with the expanded Fundamentals will be an Intermediate class that will



"Along with the new CAL and CMAL credentials will be an entirely new track of classes and attitude toward the automotive locksmith."

focus on three or four specific topics that will be a little above Fundamentals and an important step toward being more viable in the locksmith profession.

- Videos are being produced now and actually may be available by the time this is printed. They'll be on the ALOA website for members or for sale to non-members — or for members not wanting to go to the web on subjects ranging from how to use your new automotive programming tool to how to do a quick adjustment on your manual key duplicator to disassembling that 400T non-smart key version Kwikset lock to Life Safety Code Refresher and more. The focus is on helping the beginners be able to get a refresher on subjects as they continue to learn and maybe even help the seasoned pro that has forgotten certain aspects as they've grown their business.

As with every year, some of these changes will be relatively easy to put into place and get started, while others may be more complicated and may for one reason or another not be feasible in the timeframe proposed. But the Education and Certification department will continue to push new programs and trainings to enhance the benefits of being an ALOA member and to help further the industry as a whole.

Jim Hancock, CML, CMST, ALOA's education manager, began his locksmithing career at the age of 8 in his grandfather's lock shop in Gulfport, MS. He has worked in every aspect of the business, from shop tech to mobile tech to operations management. In 2003 and 2009, he was presented with the ALOA ACE Award as Instructor of the Year. You can reach him at jim@aloa.org or (214) 819-9733.

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Each ad will run for three consecutive issues. For blind boxes, there is a $10 charge for members and nonmembers. All ads must be submitted in a word document format and emailed to adsales@aloa.org by the 15th of the month two months prior to issue date. ALOA reserves the right to refuse any classified advertisement that it deems inappropriate according to the stated purpose of the classified advertising section.

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