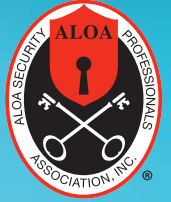


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Features

- 24** **ALOA Elections 2020**
Vote for ALOA's board candidates.
- 28** **Major's HIT-111 Installation Tool**
Tyler J. Thomas, CJIL, CMKA, CRL, reviews its specs and usage process.
- 32** **"My Door Lock Doesn't Work Properly"**
Sometimes the customer's issue is the door or hinges, not the locks.
- 36** **Easy As Loading a PEZ Dispenser!**
Combining the Abloy Protec2 is a snap with tutelage from William M. Lynk, CML, CPS, M.Ed.

Spotlights

- 10** **Investigative**
Keep organizing and learning while the world is on hold.
- 16** **Business**
Make time to conduct thoughtful evaluations, and you'll reap the benefits.

What's New

- 8** ALOA/Industry News
- 9** Applicants
- 9** Calendar

Departments

- 5** Presidential Perspective
- 6** Executive Perspective
- 12** Main Event
- 31** Products & Services Guide
- 51** Back to Basics
- 56** Education
- 57** Associate Members
- 59** Marketplace
- 60** Ad Index



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A New World

I HOPE EVERYONE HAS BEEN handling this crazy pandemic time as best they can. It's certainly been a challenge for most people, both personally and professionally. And for those of us whose health requires us to be extra cautious, I hope you are finding ways to stay busy! Maybe now is a great time to organize those pin kits and extra inventory.

Hopefully, the economy and our day-to-day lives can get back to normal sooner rather than later, but of course the timing is still up in the air with all of the unknowns. Some of your cities, states and nations have instituted closings and shelter-in-place orders to various degrees, and it's so important to follow those at this time. The more we adhere to all the precautions, the sooner we can get back to our regularly scheduled lives. So, keep yourself informed about all the mandates that apply to you. Wash your hands like your lives depend on it. (Because it's true!)

Of course, security professionals are deemed "essential" most everywhere, and a lot of you are still on the job and staying busy at work. If you're taking extra measures for the health and safety of yourself, your employees and customers, feel free to share that information on the ALOA Facebook page at www.facebook.com/ALOA.org. Maybe that way our members can learn from each other.

ALOA Events and Programs

We've all experienced professional and social events being canceled due to COVID-19. It's sad to miss out on things you were looking forward to, and it's the same for us here regarding the SAFETECH cancellation. That was necessary, of course, and we are going to come back bigger and better than ever next year in Reno. Please save the dates of April 11-16, 2021, and plan to attend.

As for the ALOA Convention & Security Expo in Kansas City, we are still a go as of press time. We are keeping a close eye on things, and the board and staff are in constant discussions with local health officials. Our first priority is the health and well being of our members, their families and our exhibitors, but we will do all that we can to still hold this event if it's feasible and advisable. I look forward to catching up with everyone at the convention each year, and I certainly hope that will still be possible. But I and the rest of the ALOA board and staff would never want that to come at the expense of anyone's health. Life is precious.

As everyone has been adapting to this new temporary way of life, ALOA has as well. We have the new online Fundamentals class to offer now, and we're giving you 20% off right now (see the article in What's New). We're also looking to hold more webinars to help you keep learning during this time. Stay tuned for updates.



We're still here for you in all other ways that we assist you as members, and you will continue receiving your regular communications from ALOA, including email newsletters and the magazine. If you have ideas about how we can help you, please drop us a line at membership@aloe.org or feel free to contact me directly at president@aloe.org.

We will continue to monitor the situation and keep you informed of any updates. Until then, stay healthy, stay safe and stay at home!

Respectfully,

Jim Wiedman, CML
President
ALOA Security Professionals
Association, Inc.
president@aloe.org

Stay Safe and Healthy

THERE IS NO DOUBT THAT this has been a challenging time for everyone, and it likely will continue to be in the near future.

So much of our lives has been affected, from our social gatherings with friends and family to our workplaces and everyday activities such as running errands.

It's been no different here at ALOA for board members and staff. During the COVID-19 public health threat, ALOA's highest priority is the safety and peace of mind of our association and division members, our staff, our students and the public. We consider all of these people part of our ALOA family, and ALOA has the greatest concern for all of those impacted by the virus and those potentially affected either directly or indirectly.

Convention Updates

The situation with this pandemic is fluid, and there is no blueprint on how to best move forward in these unique times. While some of your businesses have been affected with downtime, I understand that many of you are as busy as ever, and we are grateful for that. For those suffering financially or otherwise, our hearts go out to you. We want you to know that ALOA is taking this seriously and making changes to programs and events as needed.

As you're likely aware, we had to make the sad decision to cancel the SAFETECH Convention. As of this printing, we are still a go for the ALOA Convention at the end of July, but registration has been pushed back for now. We have moved the printing of the full registration brochure to the June issue of *Keynotes*, and online registration is delayed until then as well. For now, please continue to save the date and view all of the convention information available online at ALOA.org.

We will send out updates to members as we have more information, so please keep an eye out for those communications.

ALOA Operations

While the world seems to be in limbo, here at ALOA, it's business as usual — although we are mostly doing our work from home! Like many workplaces across the world, ALOA staff has been mostly working from their respective homes, but we continue to provide our members the same services we've always been able to.

We are still here to answer your questions, update your member profiles, send out materials and help you as needed. If you need anything at all, please do not hesitate to contact membership@aloe.org. For questions about future education events, please contact education@aloe.org.



One education opportunity of note: see the What's New article on our new online Fundamentals program. This is a great way to educate your new employees during this pandemic!

ALOA board members have also been making use of remote conferencing, and they have been in constant communication about emerging information. We will continue to consult with local health officials to determine the best course of action for any in-person events and gatherings, from our own office operations to our conventions and classes.

Please continue to check ALOA.org for updates, and we will keep our members and constituents informed of ongoing developments. Stay healthy. Our thoughts are with everyone in getting through this challenging time. Please be there for each other, and we'll continue to be a strong association for you now and in the future.

Mary A. May

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Executive Director
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ALOA Announces Online Fundamentals Program



IN A PARTNERSHIP WITH THE CMOOR GROUP AND SecurityCEU.com, ALOA is now offering its ALOA Fundamental Locksmith (AFL) professional designation in an online interactive, blended format. The course offers the same content as the in-person version of the typically five-day course, but students will now be able to go at their own pace without the additional costs for travel.

After registering and passing a background check, students are mailed their course lab kit, which contains the tools, pinning kit, locks and other hardware needed to follow and complete the online study. During the course, students also have access to online webinars for Q&A from ALOA staff members and trainers. This ensures all students have the support needed to successfully complete the course. After the completion of the course work, students then attend a one-day local or regional practicum, where they take the final exam and pass to receive their full AFL designation.

The online program will cost \$1,500 for nonmembers and \$1,350 for ALOA members, but ALOA is offering 20% off the cost during this time of social distancing. Individual courses may be purchased for \$79 each. Volume discounts are available for corporate customers.

For details on the AFL designation or the new online training program, email education@aloe.org or visit SecurityCEU.com.

NEWS BRIEFS

» **Autel's** Tech Support Team has extended their hours of operation to be from 9 a.m. to 9 p.m. EST Monday-Friday. Support is available for tool registration and updates, diagnostic troubleshooting, ADAS calibration, TPMS and key programming procedures. Autel's growing Tech Support Team consists of experienced automotive mechanics and field technicians, many of whom are bilingual in English and Spanish or French. Contact Autel Tech Support by phone or email at (855) 288-3587 or USsupport@autel.com.

Autel also has training videos available at www.youtube.com/user/AUTELus/videos.

» **dormakaba** has been selected as a Red Dot Award winner for its Switch Tech product design. Designers and companies from 60 countries entered more than 6,500 products in the competition. The products are judged on design features such as aesthetics, materials, craftsmanship, surface

structure, ergonomics and functionality. The new Switch Tech platform offers a digital replacement for mechanical keys and mechanical SFICs. The initial product to feature this platform, Switch Core, will work wherever SFICs do.

» **ABLOY USA** has introduced its new Channel Partner Program designed to solve evolving security technology and support the needs of critical infrastructure end user customers such as power and water plants, railroads and utilities. It also supports the sales expansion and growth objectives of security systems integrators who assist those end users. The integrator/dealers approved to join this program will be able to purchase products through the ABLOY distributor of their choice.

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We Need Your Help

Attention, ALOA Members:
 Help us eliminate the industry scammer problem by screening these applicants, who are scheduled for clearance as ALOA members, to ensure they meet the standards of ALOA's Code of Ethics. Protests, if any, must be made within 30 days of this *Keynotes* issue date, addressed to the ALOA membership department, signed and submitted via e-mail to membership@aloea.org or via fax to 214-819-9736. For questions, contact Kevin Wesley, membership manager, at Kevin@aloea.org or (214) 819-9733, ext. 219.

CALENDAR

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

JUNE

June 10-12
IML Security Expo
 Talking Stick Resort and Casino
 Scottsdale, AZ
www.imalss.com

June 18-20
Southern Lock 2020 Trade Show & Learning Expo
 Hilton St. Petersburg Carillon Park
 St. Petersburg, FL
www.southernlock.com

JULY

July 19-25
ALOA Convention & Security Expo
 Kansas City Convention Center
 Kansas City, MO
conventions@aloea.org or
 (800) 532-2562, ext. 101

**OCTOBER**

October 12-15
Security Leaders Business Conference
 The Guest House at Graceland
 Memphis, TN
www.aloea.org
conventions@aloea.org or (800) 532-2562, ext. 101

October 28-November 1
Yankee Security Convention
 MassMutual Center
 Springfield, MA
www.yankeesecurity.org



“All forensic work is on hold until everything has settled down and we restock our toilet paper reserves.”

Keep Learning and Organizing

YOU DON'T NEED TO BE A SHARP INVESTIGATOR TO REALIZE THAT WE prewrote these articles a month or two before they go to press. I'll bet you got a big laugh out of the April page where I talked about Tulsa and my buddy Gene Holder. Well, Tulsa is a great town and Gene is always looking for techs, but SAVTA and I were not there due to the Coronavirus COVID-19 and the restrictions we have to adhere to for travel and social gatherings. This virus is some nasty stuff, and it didn't take much to cripple the world economy — unless you sell hand sanitizer, soap and toilet paper for the consumer, or on the commercial side, masks, gloves and ventilators. You can be sure we'll stockpile the heck out of those items!

As a forensic investigator, I thought I'd investigate just how this came about. COVID-19 doesn't stand for the 19th strain of this virus. No, it stands for when it was first discovered: 2019 in Wuhan, China. Now you have a look at what the next world war will be like unless swift action is taken via biological testing. Free societies like those in western culture cannot live in isolation. You see how stupid people are right now; they bought up the entire supply of toilet paper! Is that what we need to be concerned about — a clean butt? Enough about COVID-19. You get the point.

All forensic work is on hold until everything has settled down and we restock our toilet paper reserves. Like you probably are, I have been cleaning the lab and throwing away stuff that has been collecting dust for years. I discovered that I did have a desk, and I found items I thought I lost! I have three active cases sitting on hold waiting for various things to resolve: courts shut down, site visits on hold and no contact with anyone. Need I say more?

But Education Continues

Don't pass up this opportunity to get some additional education. There are a ton of online courses just waiting for a bored individual like yourself to sign up for. Do something productive during this pandemic! (*Editor's Note: See What's New in this issue for information on ALOA's new online Fundamentals class! Send your new employees.*)

If you have any questions or would like information on IAIL programs, courses and/or CFL certificates, contact my office. ☺



Tom Resciniti Demont,
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LSFDI, ARL. President, International Association of Investigative Locksmiths.

IAILPresident@aloea.org

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Register for ALOA 2020 in Kansas City!

ALOA CONVENTION REGISTRATION WILL SOON BE AVAILABLE! THE printed brochure will be included with the June issue of *Keynotes*, but you'll find hotel and other information on ALOA.org on the Convention tab. Next month, you can read all about the classes and events that are awaiting you at the hottest event in the security industry, being held July 19-25 at the Kansas City Convention Center.

This is your best chance of the year to get industry-leading, hands-on education in a setting that allows you to network with security leaders, manufacturers and distributors. Take classes on forensic locksmithing, institutional management or electronic access control. Brush up on your automotive knowledge or get your introduction to this field in areas such as motorcycle key generation, foreign auto or the Diagnostic Box. We'll even have some safe and vault classes! There is truly something for everyone at ALOA 2020.

Plan to stay for the full two days of the Security Expo so you can see all of the latest products in action and take advantage of all the show specials. And if you didn't know how smokin' Kansas City is, come for a few extra days and see for yourself! Take in the jazz scene, eat some Kansas City barbecue and visit a few distilleries. The Kansas City Power and Light District near the convention center is a walkable and exciting area full of shops, restaurants, nightlife and live music.

Heat up your career and get registered for ALOA 2020!

Save the Date!

If you didn't see the announcement in the April issue of *Keynotes*, save the date now for the 2020 Security Leaders Business Conference! Join us in Memphis, TN, October

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July 19–25

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Kansas City, MO

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12–15 at The Guest House at Graceland. This exciting event is a crowd favorite for business owners and managers who want to learn more about finance, marketing, growing your business and a host of other topics! The intimate setting allows for an incredible amount of networking and relationship building.

More information and registration information will be available soon. To learn more, email conventions@aloa.org.



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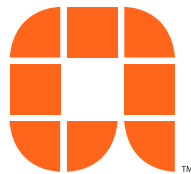


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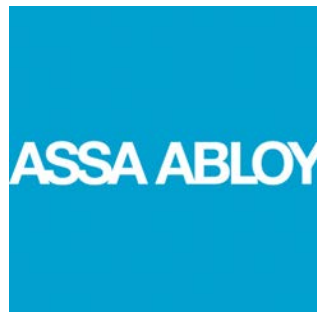
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Employee Performance Reviews

Make time to conduct thoughtful evaluations, and you'll reap the benefits. **Noel Flynn**

THIS IS THE ELEVENTH ARTICLE IN THE “TOOLS for Managing Your Business” series. We'll discuss the importance of doing employee performance reviews (referred to herein simply as “reviews”) properly and timely. We'll also look at ways to make this process more meaningful, efficient and painless.

As the business owner or manager, it is your responsibility to let employees know what is expected of them, how this will be measured or assessed and how well they are meeting those expectations.

A Trip Down Memory Lane

Let's be honest: Most owners or managers don't like having to stop whatever they're doing to handle a bunch of performance reviews and/or give pay raises. So, I suggest that you reflect on an earlier time before you became king or queen (yes, my liege; your magnificence, your ego-ness) of the realm. Go ahead and admit that, prior to your coronation, you were once a worker bee. A mere mortal and one of a mass of rabble. Just another nameless peasant... a proletariat. OK, point made, so I'll stop. Hopefully, you can still remember what it felt like to work for someone else and how important feedback and performance reviews were to you back in the day. So, please keep that in mind as we move on.

A Very Effective Morale Killer

From decades of being on the receiving end of performance reviews and also playing the role of the reviewer (and reviewing the reviewers), I can say without hesitation that one of the absolute best ways to destroy an employee's ambition and morale is to avoid or mishandle performance reviews.

Usually, this abdication of management's responsibility comes in six flavors of failure:

1. Failing to establish and set clear expectations up front — that's where the review begins
2. Failing to communicate those expectations and how they will be measured
3. Failing to communicate an employee's progress, or lack thereof, during the normal course
4. Failing to invest the time to properly prepare a performance review
5. Failing to schedule a performance review in a timely manner
6. Failing to engage in a face-to-face (bilateral) honest performance review discussion

Now let's take a deeper dive into each of these common management failures.

1. Why Do I Need to Establish and Set Clear Expectations Up Front?

As the owner or manager, if you don't set expectations, it is *you* who has failed! This can destroy morale and ultimately cause you to lose good employees for the wrong reason. Just try to imagine what would happen if NFL teams did not have playbooks comprised of specific plays that are considered appropriate for given situations. A company's employee handbook is one attempt to establish behavioral expectations, but clear performance expectations are also necessary.

2. Why Do I Need to Communicate Those Expectations?

Imagine you are drafted by an NFL team as a wide receiver. Congratulations. You arrive for practice, but the coach will

not show you the playbook. Instead, he/she says, “I don’t have time to explain. Just figure it out and do the right thing.” Fast forward to game day. You hear the play called by the quarterback in the huddle but have no idea what it means. You find out later (after the interception) that you were expected to go deep and cut back to your right, but you did just the opposite. Who is really to blame here? Although perhaps not the best analogy, the same concept applies to letting employees know your expectations of them *and ensuring that they understand*.

3. Why Do Employees Need to Know How They Are Performing Against Expectations?

Although we tend to mistakenly think of performance reviews as an annual structured occurrence, it actually should be a year-long process that culminates in the formal review event. One of the common management failures I have witnessed (when reviewing the reviewers) was the “surprise” performance deficiency. Generally speaking, allegations of an employee’s performance deficiencies should not come as a surprise to the employee! If this happens at the annual review, it strongly suggests your failure to communicate throughout the year. How many times have I heard, “If there was an issue with my xxxx performance, then why was I not told during the year so I could discuss and address it before my annual performance review? Now I’m told this will result in a lower pay raise for me.” It’s a valid point!

4. Why Should I Spend the Time to Properly Prepare for a Performance Review?

Whether you have few or many reviews to handle within a relatively short timeframe, it is foolish to wait until they are due before you begin the process. Let’s face it. If you are properly engaged with your employees, you should know most of what you are going to communicate long before you need to write it down. Come on, admit it: You still suffer from what we used to refer to as “term paper procrastination syndrome,” or perhaps because you are no longer in school, it has been replaced by “tax preparation syndrome.”

Stop blaming the employees and begin early. Spread the written reviews out and, when ready, spread out the oral portion but make sure they are on time. If you do a last-minute marathon session and rush them as a batch, you will probably do a pitiful job that is grossly unfair to the employees. Hint: If you had a boss like me who was rating your performance on how well you did your subordinates’ reviews, what grade would you receive? Quality and timeliness are key factors for

consideration. Do you expect your employees to do their jobs on time and as prescribed? Then why should you hold them to a higher standard than you hold yourself?

5. Why Should I Avoid Procrastination in Scheduling Performance Reviews?

Ask most managers or supervisors who are responsible for handling reviews why they don’t get these done on time, and you will likely hear how they are too busy doing their jobs, or similar excuses. News flash: Doing employee performance reviews in a timely manner is not an interruption of your work. As a manager or supervisor, *it is an integral part of your job!* In fact, it’s arguably one of the most important elements of your job.

If you are behind schedule for an annual (or any) performance review (especially those that will result in a pay increase), you should accept responsibility for your failure, tell the employee when you will get it done, apologize and — if applicable — make any pay raise retroactive. Employees should not be expected to suffer adverse consequences for your managerial inadequacies! Where applicable, if this indictment pisses you off and you need to blame someone, look in the mirror.

The real reasons many managers or supervisors tend to procrastinate and avoid reviews is some combination of the following: They have never been trained to do these, are not properly prepared, have not established a clear basis for expectations/evaluations, have not communicated well with the employee throughout the review year or don’t have an efficient system. In instances where the manager has many direct-report employees, all of these reasons become amplified, resulting in a rush job that can be unfair to the employees.

6. Why Should I Engage in a Face-to-Face (Bilateral) Honest Performance Review Process?

Your review process should go beyond the past year or review period. In other words, you should also discuss and establish with the employee the expectations for the coming year. Done properly, this forms the basis for next year’s review of performance and especially accomplishments. It’s also a good time to ask employees about their work or job ambitions or whatever else may be on their mind. If you don’t provide a comfortable environment for meaningful discussion (effective communication means two-way), you have wasted a great opportunity. One-way reviews turn off employees who may otherwise be able and willing to provide insights

and solutions to company challenges. Give team members a chance to be part of the solution, and they may surprise you with insights and suggestions. Oh, and be sure to avoid any non-emergency interruptions (such as taking calls) during the review discussion!

Where there are performance deficiencies worth mentioning, discuss these in a constructive manner. Explain what each core issue is and preferably provide actual examples, why it matters and what can be done to improve performance. Use phrasing such as, “Let’s make a point to work on this together so I can help you to be successful.” Avoid making this a negative session or some sort of Spanish Inquisition event. Don’t wait until next year to revisit major issues. Establish frequent follow-ups for major concerns.

Although managers certainly have both a right and obligation to discuss performance deficiencies during a review process, it is equally important that managers discuss areas where the employee’s performance has improved, is positive and possibly exemplary.

Bridging the Language Barrier

Before we go further, let’s address the common usage of certain words that can cause issues. If you’re a business owner/manager standing on top of a mountain in the Swiss Alps and shout out the word “review,” the echo coming back is “raise.” Although these two terms tend to be inexorably linked in the minds of most employees, they don’t have to be.

Reviews are typically annual, and they often coincide with the possibility of a raise. Larger firms tend to have a more structured and formal process wherein the manager provides feedback to the supervised employee (often using a form), and the employee has a legitimate opportunity to ask questions, discuss and comment. Such reviews are often scheduled either at year-end or early in the year after the next year’s budget has been established. Some companies intentionally schedule six-month non-monetary, formal reviews to encourage better communications and focus on performance, absent the monetary consideration.

The Annual Cycle Approach

One of the problems with this common annual approach is that when a reviewing manager has lots of direct reports for whom a performance review is required, this annual review process can place a heavy incremental workload on the reviewing supervisor. Hint: Review your “span of control,” which is a management term meaning how many direct reports each supervisor

must manage and thus likely prepare performance reviews for. Conversely, it’s convenient to deal with such reviews as a batch (once a year) and be able to move on to focus on other pressing business matters.

The Anniversary Cycle Approach

For reasons previously listed, some companies elect instead to handle reviews on an employee’s hire anniversary, thus spreading the workload over the year.

If the formal review event is once per year, then either method will theoretically ultimately yield the same basic result, and each has its own pros and cons. Selecting a method may be driven more by how many employees work for the company. Whatever method the firm employs, it is highly recommended that the formal review cycle not be greater than one year. Next, let’s discuss the relationship between performance and reward.

Performance Reviews and Compensation

The first step in preparing compensation increases is to establish an overall budget for wages, usually developed via a percentage increase over the current-year level. This is a “steady state” number, meaning that it’s separate from any wage or payroll increases associated with new hires that may need to be handled separately.

Let’s say you establish a budget for next year that includes an overall (steady state) wage increase of 3%. Don’t forget to increase your company’s wage-related payroll tax liability and possibly your company’s 401(k) contribution accordingly.

It’s highly recommended that you avoid across-the-board pay rate increases. While this may be less time consuming, it’s usually an expedient copout that sends the wrong message. Better to let employees know that things like effort, attitude and achievement matter. Yes, this means that some may only receive a 1% whereas some others might get a 5% increase. Of course, you need to be thoughtful about how you arrive at such decisions. Keep in mind that if the higher-paid people receive much more than the 3% average that’s baked into the budget, mathematically, this means there won’t be much (or possibly any) left to distribute to the others.

You should avoid using pay increase levels to offset major deficiencies or inequities in base wage rates. In other words, if for some reason (perhaps a promotion or change in qualifications or certifications) an employee is significantly underpaid, cure that deficit by adjusting their base wage rate, even if this has to be accomplished over a period of time. Yes, this may translate into shattering your 3% budget, so plan accordingly.

Performance Incentive Programs (PIPs)

Also consider the existence and timing of any performance incentive programs (PIPs) or bonus distributions of some kind. If an employee participates in such a structured PIP, then achievement of PIP-related objectives should be an integral part of any formal review process. Remember that a structured PIP does not have to be annual. Indeed, it can include monthly, quarterly and annual elements or a combination thereof. Next, let's look at some other considerations.

360-Degree Reviews

In addition to standard annual reviews, some larger companies will employ a review technique known as a 360-degree review aka peer review. Essentially, this 360 is, as the name suggests, all about getting objective feedback derived from being reviewed by your peers and will often include review by your supervisor, other superiors and your subordinates too. Yep, that's what I said: your subordinates! Gold stars from Ms. Brown, your third grade teacher, don't count here. "Would reports from my parole officer be considered?" you ask. Rather than be indecisive, let's just go ahead and say, without hesitation, this would be a definite maybe!

"Wait just a minute. I'm the boss, and I do the reviews of my people, not the other way around!" Yes, indeed, your magnificence. Although we all recognize your embodiment of perfection, believe it or not, there are some imperfect managers and owners out there. No kidding!

The idea is to provide objective feedback to managers in hopes of making them more aware of how they are perceived. Yes, indeed, it can be a real eye opener and humbling experience. But it has also tamed giant egos and helped managers to grow professionally. Do you have the guts to participate in such a process? Some leaders do it once, reject anything unfavorable and never repeat it. It must be a waste of time and money if you reject any unfavorable feedback! Sure, whatever you say, boss...and all of the bobble heads agreed that the emperor had new clothes!

Seriously, this can be a very useful tool and is best handled by third parties to ensure confidentiality and encourage honest feedback. Of course, if you only have one or two employees, this may not be appropriate for your company, as it would be too easy to figure out who said what. However, if you use the 360-degree method, don't spend all of your time trying



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Review Period:		xxxxx to yyyy, 2019		Reason:		Annual	
Last Review Date:		xxxx 2018		Reviewer:		El Jeffe	
RATING SCALE: From 1 (low) TO 5 (high)							
.....1 = Unacceptable, requires immediate attention			2 = Needs improvement			
.....3 = Average or Satisfactory			4 = Very good - above average			
.....5 = Excellent or outstanding				Remarks: Use back of form or separate paper if need			
RELIABILITY AND DEPENDABILITY:				KNOWLEDGE & EXPERIENCE:			
Considerations:	Rating	Remarks		Considerations:	Rating	Remarks	
Attendance	4			Mechanical	4		
Punctuality	3			Electronic	4		
Safety	3			High Security	3		
Reliability	4			Keying	3		
Dependability	3			General	5		
Total	17	Maximum score = 25			19	Maximum score = 25	
WORK HABITS AND ATTRIBUTES:				PRODUCTIVITY:			
Considerations:	Rating	Remarks		Considerations:	Rating	Remarks	
Judgment	4			Deadlines	5		
Independence	4			Quality	4		
Attitude	4			Efficiency	4		
Written communication	3			Adaptability	2		
Verbal communication	5			Other	3	See note #2 on back	
Total	20	Maximum score = 25			18	Maximum score = 25	
Grand Total =====>		74		Maximum score = 100			
Overall reviewer's comments:							
Good employee. Wish we had more like him.							
Follow up actions required:							
Struggles with accepting constructive feedback .. is VERY defensive. We need to work on this together.							
Employee's response:							
I respectfully do not agree with the feedback, especially xxxx and yyyy. See my comments on back of form.							
Employee's signature				Date:			
Reviewer's signature:				Date:			
Executive's signature:				Date:			

Figure 1. Using a template such as this one can help standardize the review process across the board in your organization.

to figure out who said what, so you can shoot the messenger, especially after assuring participants of confidentiality and requesting honest feedback. Whether you agree or not with the comments, you need to know how your employees really feel, and in this instance, *perception is their reality*. Look at this as a great opportunity to identify areas of misunderstanding or confusion where you can clarify, provide better explanations to employees and help keep them better informed. If you do it properly, it's amazing how well your hearing can actually improve without hearing aids!

Employee Performance Review Template

Let's look at an employee performance review template (see *Figure 1*). This is something I created in Excel, which offers two advantages: 1) The categories/nomenclature can be easily changed and 2) the formulas will handle the math for you. Of course, you can also use the form and do the simple math manually.

If you want to use this template, it can be found linked in this paragraph in the copy of this article in the ALOA Tech Link mobile app at ALOATechLink.com. Look for the article in the General Locksmithing category. If you've never logged

in before, your user name is your email address you have registered with ALOA, and your password is your member number. If you need assistance logging in, please contact wendya@madisonmilesmedia.com.

Section One

The top section of the form is pretty much self-explanatory. If needed, you can have different versions for each department so that your categories can be tailored.

Section Two

The second section is the rating scale that runs from a low of 1 to a high of 5, with explanations of what each scale number represents. I selected this tight range (some people prefer a scale of 1-10) because it forces the rater to be more decisive. OK, you got me. The other reason is that I confess I have yet to figure out the demarcation line between a grade of B+ and a grade of A-. Are you happy now that I have 'fessed up? But seriously, this tighter scale should help make the reviewer's job easier and usually results in a higher degree of consistency among many raters.



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Sections Three and Four

Sections three and four include four categories, and within each category are five relevant considerations. For each of these considerations, the reviewer inserts a number between 1 and 5, and the formulas sum those five numbers for each of the four categories. As constructed, there is a maximum score of 25 for each section. This means that each consideration is weighted equally. You can customize this to assign greater weight to one or more sections or categories.

Section Five

In the fifth section, scores from each of the previous four sections are consolidated into a composite grand total score (of all four categories) that cannot exceed a grand total score of 100.

Section Six

This section has three self-explanatory parts:

- Overall reviewer's comments
- Follow-up actions required
- Employee's response

Each of these parts is formatted for free-form narrative, and the back of the form can be used for further comments. You can also elect to supplement this form with a second one for more narrative or use a different form for managers and/or supervisors.

Section Seven

The seventh and final section is for signatures and dates. Note that there is a place for executive's signature and date. The reviewer's superior uses this space to acknowledge this review. The owner may wish to be aware of each review, and this tends to encourage reviewers (who may be forepersons, supervisors or managers) to strive to do a good job with each review. And you get to know if reviews were done on time and how well, and later you'll know how employees felt about their reviews.

When a review is ready for presentation, the boss, owner or whoever plays the executive role for this purpose should first review it with the reviewer. This means there are effectively two

reviews taking place. The boss can determine whether and to what extent this proposed review may be unfair, inaccurate or — for whatever reasons — need modification.

So the reviewer's boss gets a chance to see and evaluate how well the reviewer is doing with reviews of their own direct reports. Better to intervene and prevent delivery of a poorly developed performance review than to have to deal with the consequences later on. Remember, even generally good managers may not necessarily be good at doing performance reviews, and they may need guidance to develop that skill. Beware of reviewers who believe everyone is perfect, and encourage consistency in application of standards. You should also be willing to change a review in instances where the employee can offer convincing or compelling justification.

You may also want to engage in a potentially revealing practice of first having each employee complete a self-evaluation using the same form. The supervisor or reviewer can then compare how the employees rated themselves to how the reviewer rated the employees. Obviously, material differences in scoring of the same individual suggest poor communication or perhaps some degree of self-delusion. A high degree of apparent self-delusion may be suggestive of managerial potential. Just couldn't resist that one.

Recap and Summary

If you take nothing else away from this article, remember that as owner or manager, doing reviews in a professional and timely manner is one of your most important job responsibilities. It also can help retain good staff, especially in a tight job market.

The performance review process actually begins on the first day of a new hire or on the day of the previous performance review. This is when managers' expectations and metrics are effectively communicated, and employees can acknowledge understanding. An employer's expectations should not be treated as "classified," so let's not keep them secret.

Use a form (such as the template provided) that helps make the review process efficient, especially for those who have to do many

of these or may be less comfortable writing commentary. Revisit the span of control and limit how many reviews and direct reports any supervisor or manager has. The executive (whoever plays that role) should personally review all proposed reviews prior to them being presented to the employees. This is an opportunity to judge how well reviewers are doing their evaluations and to intervene while changes can be made and may be appropriate. Be sure to follow up later to gauge employee feedback.

If you have enough staff, consider using 360-degree reviews. One affordable option is the DISC Profile commercially available testing method for each employee (or at least supervisors and managers).

Make every day a performance review day by offering well-earned compliments such as a sincere “great job on that xxxx” or “I liked the way you handled that yyyyy.” Simple gestures of this nature can contribute to a desirable work place environment. Incidentally, “a desirable workplace environment” is consistently ranked as the most-important element in employee job satisfaction —although important, money is not mentioned first. Conversely, it’s best to handle performance or other work-related deficiencies or complaints in private, and be

sure to follow the chain of command. Specifically, don’t end-run the employee’s direct supervisor. Use approaches such as: “You do a good job overall, but there is one important area that I want to help you to improve. So let’s work on xyz together.”

You can and should handle performance reviews properly and in a timely manner. Done well, it can be a worthwhile investment of your time and effort. As Nike likes to say, “Just do it!”

In the next article, we will discuss “Leadership in Crisis Mode.” We’ll cover tips on navigating your business through an economic storm – a timely topic for many members. ☺



Noel Flynn is a degreed business management consultant with global senior leadership experience, including more than 20 years in manufacturing, wholesale distribution and consulting sectors of the security industry. Noel has been a senior executive, officer, board director and adviser to not-for-profit and for-profit companies in numerous industries worldwide. This includes being an ALOA board member since 2011, and he is also an ACE instructor, developing and teaching business management.

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ALOA ELECTIONS 2020

A LETTER FROM THE PRESIDENT

The bylaws of ALOA Security Professionals Association, Inc., designate that the Secretary of the Association and Directors of the International, Northwest, South Central and Northeast regions shall be elected in even-numbered years. The bylaws allow voting by proxy, a procedure that allows all members to participate in the election of their respective directors and/or officers. A proxy allows you to authorize someone to vote for you at a meeting.

As president, I've called a special meeting at 10 a.m. CDT on June 5, 2020, at ALOA SPAI Headquarters, 3500 Easy Street, Dallas, TX. The purpose of the meeting is to elect the officers and directors of the association. The ballot is in the form of a proxy, prepared for you to give specific instructions to the holder of the proxy. This will ensure that your vote is counted exactly as you desire. You must provide your name, member number and date, and must sign the form (Failure to properly complete the proxy may result in your ballot being invalid).

Please vote for secretary and your representative director. Write-in candidates are not allowed, and no one is "running from the floor" at this special meeting of the membership.

Please vote online at www.aloa.org, or mail or fax the proxy as soon as possible. In order for your vote to count, the holder of your proxy, as designated, must be present at the meeting and have the properly completed proxy with him. This means that your ballot must be received no later than 11:59 p.m. CDT on June 3, 2020. You do not have to designate Barry Roberts, Esq., as your proxy. You may give your proxy to anyone else, but they must attend the special membership meeting on June 5, 2020, with your signed and dated proxy in hand.

Please participate in the future of your association!

Best regards,



Jim Wiedman, CML, CAI
President
ALOA Security Professionals
Association, Inc.
president@aloe.org

FOR THE OFFICE OF **SECRETARY**

Vote for one (1) only. Eligible to vote: All Active, Probationary, Retired, Life, Company and Associate Members



Clyde T. Roberson, CML, CMST

Clyde Roberson is the Director of Product Management and Field Services for Medeco Security Locks.

FOR THE OFFICE OF **SOUTH CENTRAL REGION DIRECTOR**

Vote for one (1) only. Eligible to vote: All Active, Probationary, Retired, Life and Company members whose business address is in AR, KS, LA, MO, OK or TX



Mark E. Dawson, CRL, CFDI, LSFDI

Mark is the current South Central Director for ALOA SPAI. He is working with other board members and ALOA Staff on three active committees. The Security Leaders Business Conference, Audit and Membership Committees. If you have attended an ALOA Event or any of the major distributor shows in the South-Central Region, you have most likely sat in class with or met Mark on the show floor. Mark has been in the security industry for over 35 years. He and his wife Kathy own Dawson Safe and Lock Services in The Woodlands, TX and they are in their 23rd year of service.

FOR THE OFFICE OF **NORTHEAST REGION DIRECTOR**

Vote for one (1) only. Eligible to vote: All Active, Probationary, Retired, Life and Company members whose business address is in CT, DE, DC, MA, MD, ME, NH, NJ, NY, OH, PA, RI, VT, VA, WV, APONY, Quebec, Labrador, Newfoundland, Nova Scotia, New Brunswick or Prince Edward Island



Anthony E. Wiersielis, CPL, CFDI

I have been a locksmith since 1985, an ALOA member 22 years, and hold licenses in NY, NJ and New York City. I am currently a member of IAIL and the Keys Square Masonic Club. I am a CFDI and a CPL working towards my CML.

Currently I am working as a Locksmith/Access Control technician for a large multi-national company. I have worked in all phases of the craft, in the NYC metropolitan area. I've written "Back to Basics" for *Keynotes* since 2010. I'd appreciate your vote for NE Director. If elected, I will try to speak to as many of you as I can. An organization is nothing without its members, and I'd like your input on how we can make ALOA even better.

FOR THE OFFICE OF **NORTHWEST REGION DIRECTOR**

Vote for one (1) only. Eligible to vote: Active, Probationary, Retired, Life and Company members whose business address is in AK, ID, MT, OR, WA, WY, APOSF, Alberta, British Columbia, Nunavut, Saskatchewan, Yukon Territory or Ontario



Adrian Holley, CRL, LSFDI

My name is Adrian Holley, and I am a locksmith for Montana State University in Bozeman and a small business owner. I have been a member of ALOA since 2016. As a newcomer to our trade, I have a lot of excitement for the future and a strong desire to learn. My goals for ALOA are to return value to our membership, increase membership and increase access to meaningful educational opportunities. As the Northwest Region Director, I will work hard to create an inclusive and supportive organization while strengthening the network of our talented members. Our region has been underrepresented for the past

few years, and I would like to have our voices heard again.

I would be honored to have your vote and confidence as your Northwest Region Director.

FOR THE OFFICE OF **INTERNATIONAL – ASIA REGION DIRECTOR**

Vote for one (1) only. Eligible to vote: All Active, Probationary, Retired, Life and Company members whose business address is in any location in Asia



Beta TAM BA (Hons), FCSFS, RL

Beta TAM is a leading forensic expert in Firearms and Tool Marks. He worked as an Inspector to Chief Inspector in the Royal Hong Kong Police (1976 to 1996), a Senior Forensic Scientist (Firearms/Tool Marks) with the Wisconsin State Department of Justice in the USA (1997–2001), a Firearms Examiner with the Los Angeles Police Department (2001–2008), an Independent Forensic Firearms and Tool Marks Consultant (2008 to now), the Director of Forensic, for the Independent Commission of Investigations in Jamaica between 2016 and 2017.

Beta is a Fellow of the Chartered Society for Forensic Sciences, a Distinguished Member of the Association of Firearm and Tool Mark Examiners, an ALOA member and the Chairman of the Associated Locksmiths of Hong Kong SAR (2018 to 2020).

The languages spoken fluently by Beta are: English, Chinese, Cantonese and Japanese.

FOR THE OFFICE OF **INTERNATIONAL – EUROPE REGION DIRECTOR**

Vote for one (1) only. Eligible to vote: All Active, Probationary, Retired, Life and Company members whose business address is in any location in Europe



Hans Mejlshede, CML

I am the past president of ALOA as well as past president of ELF and the Danish Association. I have also been an instructor in forensic locksmithing for more than 25 years.

While ALOA is very well known in the USA and Canada, it is not as well known in Europe. If I am elected, my mission is to change this, with a high priority on recruiting new European members.

One very attractive thing about ALOA is our *Keynotes* magazine, as there is nothing like that in Europe. Our annual convention is a great selling point as well. If I can convince some Europeans to go to the annual ALOA convention, it will add to class attendance.

ALOA ELECTIONS 2020 BALLOT

The undersigned, being an ALOA Security Professionals Association, Inc. (ALOA SPAI) member, hereby appoints Barry Roberts, Esq., my proxy and true and lawful attorney of the undersigned to attend the Special Meeting of the Membership of ALOA to be held at 3500 Easy Street, Dallas, TX on June 5, 2020, at 10 a.m. CDT, or any adjournment thereof, and to vote on behalf of said ALOA member as designated below:

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☐ **Beta TAM BA (Hons), FCSFS, RL**

For the Office of International Region – Europe Director

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☐ **Hans Mejlshede, CML**

Print/type name of ALOA member

Member number

Signature

Date

This proxy must be signed and dated with member number to be considered valid. It must be received no later than 11:59 p.m. CDT, June 3, 2020, and be mailed/faxed only to:

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102 W. Service Rd, #585
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MAJOR'S HIT-111 INSTALLATION TOOL

Tyler J. Thomas, CJIL, CMKA, CRL,
reviews its specs and usage process.

VERY FEW TOOLS IN MY ARSENAL ARE AS HELPFUL AS MAJOR MANUFACTURING'S HIT-111. The HIT-111 is a jig that allows you to quickly and accurately drill through-bolt holes for cylindrical leversets. Consider a common scenario we frequently encounter: installing a new Grade 1 cylindrical leverset. Maybe the door we are installing it on doesn't have a lock on it, or maybe the brand of lock currently on the door doesn't match what you have on the truck. Whatever the case, there is a chance you're going to need to drill through-bolt holes. Maybe they aren't in the same position, or maybe they aren't there at all. The HIT-111 has you covered, no matter what you may encounter, and it also makes the process easy. You don't have to fool around with a template, making sure it's perfectly folded and aligned on the door and that it's not moving while you're marking. You just put the HIT-111 on the door, tighten it down, and you're ready to drill.

HIT-111 Specs

The HIT-111 fits 1½" to 2" thick wood and metal doors with 2¾" backsets out of the box. The backset can also be increased to 3¾" and 5" with the HIT-BAK attachment (sold separately). I have no problem making it work on 2¾" doors as long as I make sure that it is level to the rest of the door (see *Figure 1*). I have done this enough to give it the eyeball treatment, but it's very easy to accomplish with a combination square as well (remember, the difference between 2⅝" and 2¾" is ⅛").



Figure 1. The tool works on 2 $\frac{3}{8}$ " doors as long as you ensure that it is level to the rest of the door.

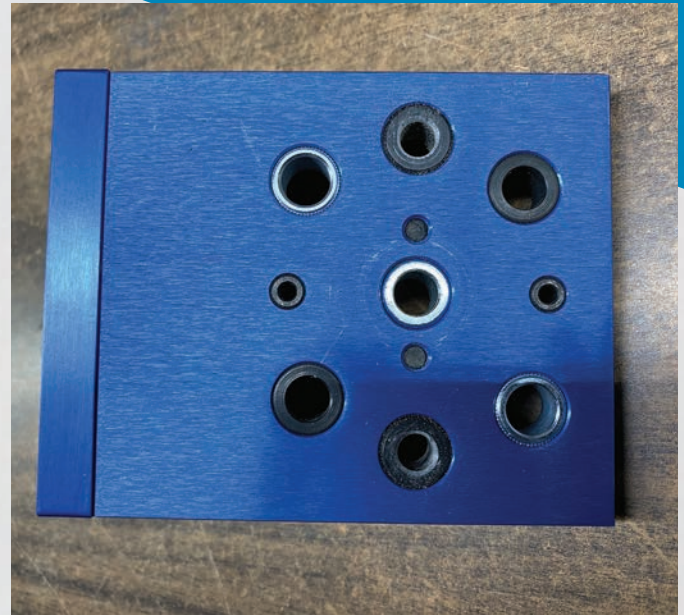


Figure 2. There are four pairs of bushings on the HIT-111.

The HIT-111 allows you to drill the through-bolt holes for multiple manufacturers and lock models. Here is a partial list of popular cylindrical leversets that the HIT-111 will assist with installing:

- Arrow GL, MLX, QL, RL
- Best 7KC, 9K
- Cal-Royal Calypso, Genesys, Omega
- Corbin Russwin CL3300, CL3400, CL3500, CL3600, CL3800, CL3900
- Dorma C500, C800, CL700/CK700
- Falcon B, K, T
- General Lock L1
- Hager 2500, 3400, 3500
- LSDA 5000, LF2000
- Marks 170, 195, 295
- Marshall Best MB1, MB2
- Sargent 10 Line, 6500 Line
- Schlage AL, ND
- Tell LC1200, LC2400
- Yale 4600, 4700, 5300, 5400

I have also used the HIT-111 to assist with installations for electronic locks such as Arrow's Revolution and Yale's NexTouch, where through-bolt locations have to be perfect for proper operation.



Figure 3. Start by removing the existing hardware, if applicable, including the latch.

There are four pairs of bushings on the HIT-111 (Figure 2). Each pair is at a different position and uses a different-size hole. Bushing pair #1 is at the 6 and 12 o'clock positions and uses $\frac{5}{16}$ " holes. This is by far the most common bushing pair you will be using. Bushing pair #2 is at the 2 and 8 o'clock positions and uses $\frac{3}{8}$ " holes. Bushing pair #3 is at the 4 and 10 o'clock positions and uses $\frac{7}{16}$ " holes. There is also a bushing pair at the 3 and 9 o'clock positions that uses $\frac{5}{32}$ " holes. This pair is not intended for through-bolts but rather

the anchor plate lugs found on many cylindrical leversets. These are critical for installations, especially on metal doors.

The Process

Using the HIT-111 is rather straightforward, but there are some finer points that bears mentioning.

1. Start by removing the existing hardware, if applicable, including the latch. We need to get to our 160 or 161 prep only (Figure 3).



Figure 4. Place alignment washers into the crossbore and align the HIT-111 to the door.

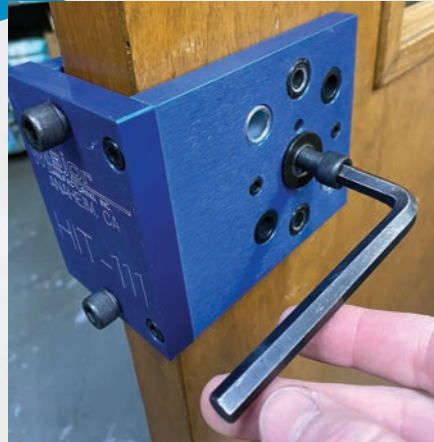


Figure 5. Fasten the inside and outside drill guides using the $\frac{3}{8}$ " Allen head screw.



Figure 6. Select the bushing pair you will be drilling and begin by drilling from one side.



Figure 7. If applicable, drill for the anchor plate lugs.

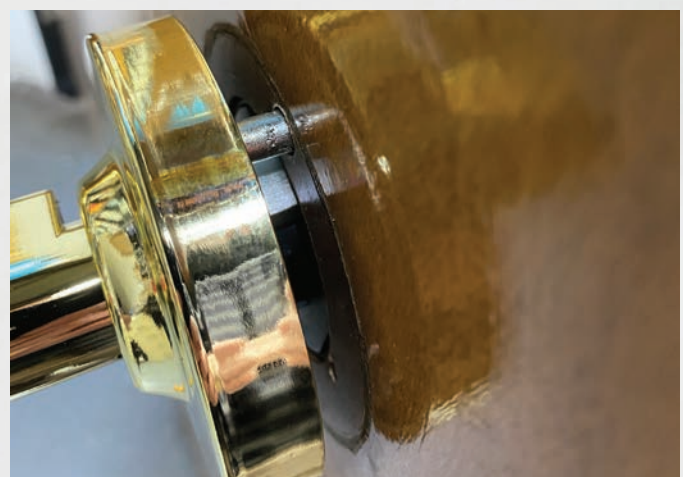


Figure 8. The last step is to install the lock.

2. With all hardware removed, it's time to attach the HIT-111. There is an inside and outside drill guide. It does not matter which guide you place on the inside or outside of the door. Place alignment washers (Figure 4) into the crossbore and align the HIT-111 to the door.
3. Fasten the inside and outside drill guides using the $\frac{3}{8}$ " Allen head screw (Figure 5). Exercise caution when tightening the HIT-111 on hollow metal doors, as you can start to crush the door if you tighten it too much.
4. Select the bushing pair you will be drilling and begin by drilling from one side (Figure 6). Just like

drilling crossbores, you should never attempt to drill through-both holes with one pass. Also, keep the drill bit as perpendicular to the rest of the HIT-111 as possible. This will prevent unnecessary wear to the jig and your bits. Finish by drilling from the other side.

5. If applicable, drill for the anchor plate lugs (Figure 7). You do not need to drill entirely through the crossbore for this step — just enough for the anchor plate lugs to fully enter the door.
6. Remove the HIT-111 and clean any debris from the through-bolt holes.
7. Install the lock (Figure 8).

The HIT-111 is all about speed and accuracy. Once you have performed a few installations with the HIT-111, the process undoubtedly will be faster than without it. There will also be no questions about alignment or placement of the through-bolt/anchor plate lug holes. You can get in, get out and get on to the next job and still deliver quality installations along the way. ☺



Tyler J. Thomas, CJIL, CMKA, CRL, is the vice president of Security Engineering Consultants in Atlanta, GA. He helps maintain the website

www.lockreference.com.

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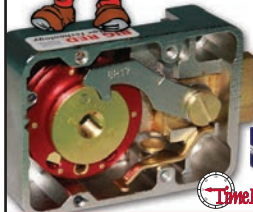
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“MY DOOR LOCK DOESN'T WORK PROPERLY”

Sometimes the customer's issue is
the door or hinges, not the locks.

By Greg Perry, CML, CPS

A VERY COMMON SERVICE CALL FOR LOCKSMITHS IS THE DOOR NOT locking correctly. We should be able to work on the entire opening. Quite often, the lock operates correctly, but instead it's the hinges, pivots or something else that is the problem. These calls lead to more sales and service if you are willing to add a little inventory and tools. Often, the hinges are bent or just worn out. Sometimes the building or doorframe has shifted, creating issues. Any time you are looking at an opening, begin with verifying the frame is plumb, square and properly secured in the wall. If anything is not correct, fix that before looking at the hinge problem. One of my favorite things to see is the wedge shoved in between the door and the hinge (often put there by the janitor or delivery person). For us, it is guaranteed work. In most cases, only the hinge itself is bent or damaged. In other cases, the mounting plate inside the hollow metal frame or door has broken free from its welds. When that happens, it may require a new door or frame and perhaps calling in a carpenter or door shop if that is not your skill.

The Steel Door Institute (SDI) has some great resources for working with steel doors and frames. All doors and frames should be shimmed or adjusted to the manufacturer's

instructions. If you are working with a fire-rated opening, ensure any parts or adjustments you make do not violate the door listing. As an example, use steel shims instead of cardboard shims for fire-rated openings. Installation and shimming videos from SDI can be found at www.steeldoor.org/installation.php.

A Potentially Simple Fix

Perhaps the simplest fix is to tighten the hinge screws. Loose hinge screws – especially in the top hinge – will cause a door to sag. Other times, the door hinges need to be shimmed, but often the hinge or mounting has been bent just a little.



Figure 1. This wedge is designed to hook over the top of the hinge pin with the door open. It works great for holding the door open. It also works great to bend and damage hinges when someone uses the door as a lever to try to close the door with the wedge in the place.



Figure 2. The larger GKL HA4 tool is closed on the end for more strength. The author finds it generally works on all commercial grade hinges.

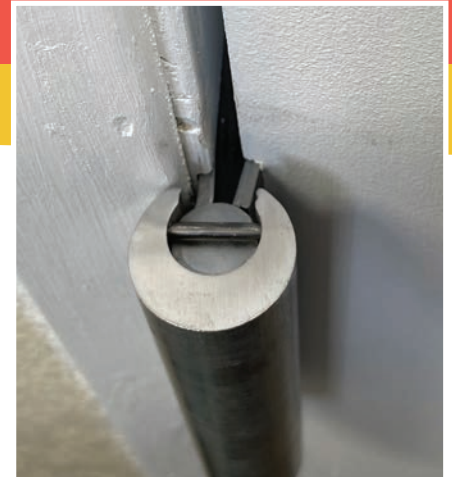


Figure 3. The HA3 tool has a roll pin to keep it from sliding off the hinge. It fits better on the smaller knuckles of standard-weight hinges and sometimes will fit in spaces that the larger tool doesn't.



Figure 4. Residential hinges need to be adjusted one knuckle at a time. The "hulk" tool provides this adjustment without opening the door. Tighten the tool on a knuckle and use the tool a little like a wrench to move the knuckle. Then move to another knuckle and move it the same amount.



Figure 5. This door has dropped. You can see the gap between the top of the door and the header.

You may need to bend or correct the way the hinge is swaged. Swaging is the term used for the offset of the hinge knuckle. Reswaging moves the hinge barrel in or out of the opening, and in most cases, we want to move it out to lift the door leaf. This often will fix a latch that is not engaging or a deadbolt that doesn't extend into the

strike hole. The ideal way is to replace the hinges, or remove the hinge and bend the knuckles slightly to adjust the swage. An alternate way is to employ one of the tools that several companies have made for adjusting the hinge knuckle swage when bent out of place. Adjusting with the hinge installed can be damaging to the door or

frame, so use care not to break or bend the wrong part or pull screws out. The idea is that a little bit is good and a lot is bad. With a 36" lever (door), it is easy to break things.

GKL Products makes several different sizes of their Hinge Doctor tools for reshaping or bending the hinges. The top



Figure 6. This hinge is worn out. No amount of adjustment is going to help this one, and it needs to be replaced.



Figure 7. Here is the result of the worn-out hinge: The bottom bolt of the exit device has scraped a groove in the threshold.



Figure 8. The other door hinge was far worse because the bottom bolt didn't hang below the door bottom. The wear was only to the entire threshold surface.



Figure 9. Removing the old thresholds reveals the mounting bracket for attaching the threshold to the jamb.

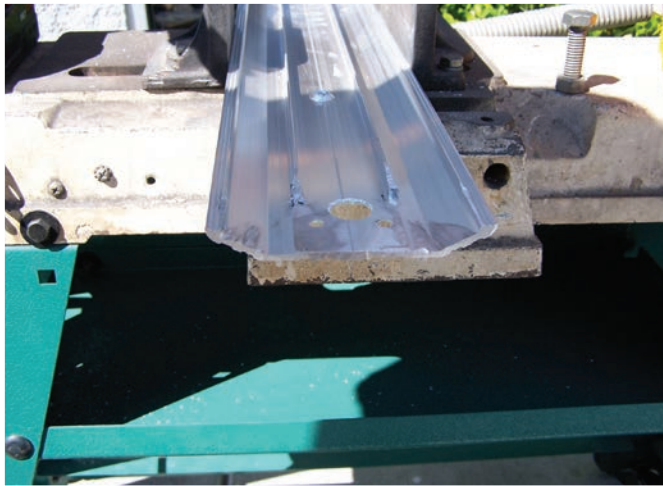


Figure 10. The new threshold has support ribs on the bottom that had to be removed to fit over the mounting bracket. The author used a flap disc on an angle head grinder to remove the ribs.



Figure 11. The doorstop had to be cut away to allow room for the new threshold.

hinge is usually the only hinge that needs to be adjusted. I have adjusted the middle hinge, but the bottom hinge should normally never be adjusted. The way it works for commercial or larger hinges is to place the tool over the hinge with the door closed, then open the door gently until it binds and move it about another inch or two more. It is always better to start with a little movement and then test. This bends the hinge knuckle back closed. If it needs more, you can place the tool back on and bend it a little more. Use care to not over bend, but if you do, simply place a 1/8" hex key between the door and frame and close the door to bend it back open. On hollow metal doors and frames, this must be done gently to avoid damaging the hinge reinforcement (the steel plate that's welded inside the door and/or frame).

Hinge bending tools are not the answer in many cases. Often, the hinges are worn out and need to be replaced. Most commercial hinges are standard weight and 4 1/2" x 4 1/2" size. Hinges are available in plain bearing (meaning just the hinge metal), and for only a little bit more money you can supply ball-bearing hinges. If the door has a door closer, the hinges should

always have ball bearings. If it is an out-swing door, the hinges should have fixed pins or NRP, meaning non-rising or non-removable pins. Often, this is a set screw that goes into a groove on the hinge pin. Because of limited space in my service vehicle, I only carry ball-bearing NRP 4 1/2" x 4 1/2" hinges since they work in most cases.

A Not-So-Simple Job

We had a job a while back that came in as the door not latching correctly, and it involved a little more than just hinge adjustment or replacement.

The doors had been dragging for so long that the bottom bolts wore grooves in the aluminum thresholds. Thresholds (in most cases) are not difficult to replace. They need to be cut accurately and perhaps need some modifications, depending on the model. I will admit that I guessed wrong on the threshold. The size was the same, but the original threshold didn't have any support ribs. This meant there was a little extra work to modify the underside.

Once the job was complete with new hinges, we noticed the frame had shifted a little from plumb and square. We adjusted or tightened the glass door jack screw a


little, but I'm always afraid to tighten it too much, as this can break the glass. To correct this, the entire storefront would need to be disassembled and reinstalled or replaced.

Working on locks makes us money, but if you aren't working on the entire opening, you are leaving money on the table. We already have a relationship with the customer who just needs it fixed. Most of you already work on door closers in addition to the locks, so adding hinges, pivots, thresholds, door sweeps and other builder's hardware just makes sense to add to your bottom line. ☺



Greg Perry, CML, CPS, is a certified master locksmith and certified professional safe technician, working in all phases of locksmithing. He has taught various locksmith topics for 10 years. He currently works in the public sector as a locksmith. He has worked in the hardware industry since 1975 in wholesale, retail and institutional settings. He has written extensively for locksmith magazines and is a five-time *Keynotes* Author of the Year. Any opinions expressed by Greg in his articles are his alone and do not reflect any official government position.

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EASY AS LOADING A PEZ DISPENSER!

Combining the Abloy Protec2
is a snap with tutelage from
William M. Lynk, CML, CPS, M.Ed.

IHAD THE PLEASURE OF ATTENDING AN ABLOY PROTEC2 FACTORY Certification class a few months ago. There, the instructor stated, “It’s as easy as loading a PEZ dispenser!” And, in fact, it was. The Abloy cylinder is certainly confusing to those who are used to combining traditional pin tumbler cylinders. But, even considering the 21 moving discs and washers, it’s a snap with a bit of quality instruction and guidance.

Background

Many locksmiths believe the Abloy cylinder was created in Canada, but this unique rotating disc cylinder was invented in 1907 by Emil Henriksson in Finland and is used in more than 80 countries worldwide (see *Figure 1*).

Henriksson was a precision mechanic, living in Helsinki, Finland. One day — while he was repairing a cash register — he realized that the same principle of the rotating retainer discs used in the cash register could be applied to locks. In 1919, he patented his first lock as Henriksson’s Patent Lock (*Figure 2*).

A company in Finland by the name of Ab Lukko Oy (Abloy) was contracted to produce the lock, and he subsequently sold the patent rights. He worked on the company board for years afterward. Emil Henriksson passed away in 1959. In 1994, Abloy merged with its Swedish competitor ASSA, forming ASSA ABLOY.

Returning to 2020, the newest Abloy Protec2 line uses the same rotating disc principle as the original product, though the Abloy Protec2 offers worldwide patent protection until 2031. Because of the disc blocking system, Abloy states that the cyl-

inder is virtually pick-proof and allows for millions of changes within a master key system, which we will look at later.

Because the Abloy cylinder operates with “rotating discs,” similar to the inner workings of a safe (*Figure 3*), it is an excellent choice when weather-resistant technology is necessary. Abloy also claims there is no 3D key duplication possible. And, only Abloy-controlled key machines cut Abloy keys. Additionally, they assert that rotating detainer disc cylinder locks are more secure than conventional pin-based locks. So, where would the Abloy Protec2 cylinder most likely be used? Excellent question.

Cylinder Uses

We all know that risks from organized crime, corporate espionage and terrorism are growing in sophistication. Consequently, this means security must also



Figure 1. Finnish mechanic Emil Henriksson invented the Abloy rotating disc cylinder in 1907.

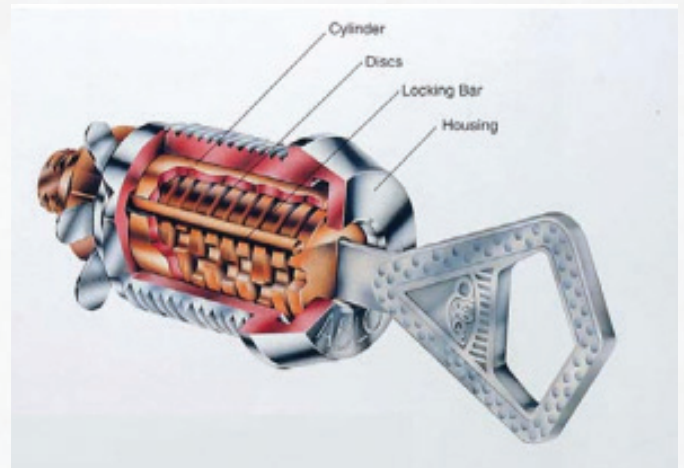


Figure 2. An old Abloy cylinder with key is shown.



Figure 3. The rotating discs are ready for key insertion.

grow in sophistication, especially with regard to critical infrastructure. Wherever high security is a requirement, Abloy Protec2 may be used, especially within sensitive applications or those located in exposed locations.

Keep in mind that many utilities, public institutions, industrial enterprises and businesses must deliver their services 24/7. Any break or interruption in some services can cause a severe challenge to security, a costly loss of revenue, a break in health and safety and a ruined reputation. This includes colleges, universities, hospitals, government, utilities, defense industries, transportation, oil and gas, nuclear power plants, gaming venues, chemical factories and vending applications. Not only must the cylinder provide physical security, but it often must continually withstand the harshest of ele-

ments without a decline in performance or reliability, ensuring lasting security in the heat and cold, wet environments and anywhere else a facility and its requisite equipment are located.

Abloy Protec2 is available in most lock formats, including, mortise, rim, KIL, KIK, cam, padlock, deadbolt, interchangeable core retrofits for Yale and Schlage, cabinet, switch, safety deposit, coin operated, auxiliary, electronic and CLIQ.

Let's now take a look at the construction and operation of the Abloy Protec2 cylinder for a clearer understanding of the components and how they work together.

Basic Operating Principle

Within an Abloy Protec2 cylinder, the key meets virtually no resistance when inserted into the keyway. There are no spring-loaded parts to wear out. Only the

correct key rotated a quarter turn (clockwise or counterclockwise) will align the locking bar gates on all the discs.

Once the discs are aligned into the correct position — allowing the locking bar to fall into the groove and disengage the drum from the cylinder housing — the key and cylinder can then be turned further to open the lock. Then, the key can be turned back to the starting position and be removed from the keyway.

The combination is automatically scrambled by the two return bars. Unless this scrambling occurs, the key cannot be removed. This feature ensures that the cylinder doesn't remain unlocked after the key is removed.

So, there it is in a nutshell. But the construction of this unique cylinder needs further investigation, so let's dig right in.

CYLINDER STRUCTURE

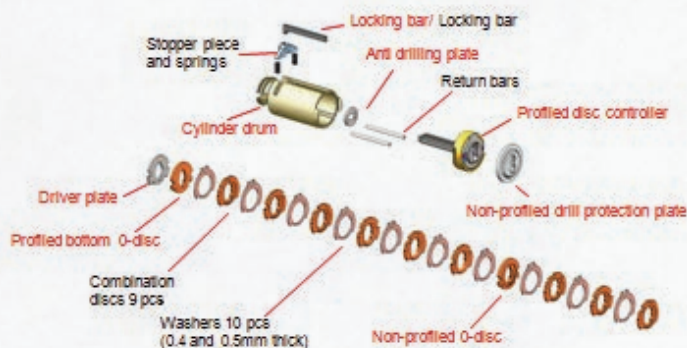


Figure 4. This image provides an exploded view of the Abloy Protec2 cylinder structure.



Figure 5. There are six combination discs.



O-middle disc



O-bottom disc

Figure 6. The two variations of the 0-discs are shown.

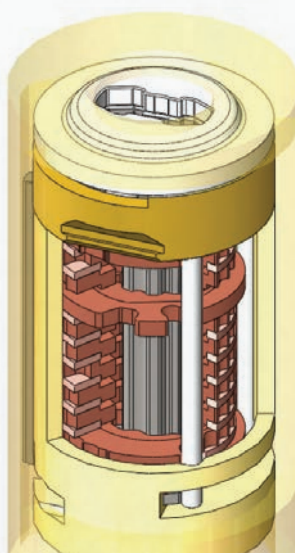


Figure 7. The cylinder drum with key is depicted, showing one of the return bars.

Construction

The exploded view (*Figure 4*) shows the cylinder structure and the components in an Abloy Protec2 cylinder. It will make much more sense for the reader to examine the lock components first before a more detailed description of how the cylinder and key operate together. So, let's focus for now on the discs, the return bars and the disc controller.

Discs

The true guts of the Abloy Protec2 cylinder consists of the 11 discs. There are two types of discs: code discs and zero discs. As an aside, there are also 10 spacers (aka washers) divided into two types: nickel and bronze.

In *Figure 5*, you can clearly see the six permutations of the code discs. These are the discs that will match the corresponding key cuts. Notice that five of the six code discs have varying locations of the two cutouts. The #6 disc has only one. These cutouts are where the locking bar will fall when the discs are aligned, allowing for cylinder drum rotation (opening of the lock). You may also note tiny indentations. These are false gates to further thwart picking attempts. All discs are loaded into the cylinder with the embossed side down.

There are two zero discs in each cylinder (*Figure 6*). Their purpose is to move the two return bars. One is the non-profitted middle zero disc, and the other is the profitted bottom zero disc.

There are also master discs, which we will discuss later.

Return Bars - Disc Blocking System

The purpose of the return bars is to block attempts to manipulate the lock. This is also known as the disk blocking system (*Figure 7*). The two zero discs aid in preventing manipulation. They also

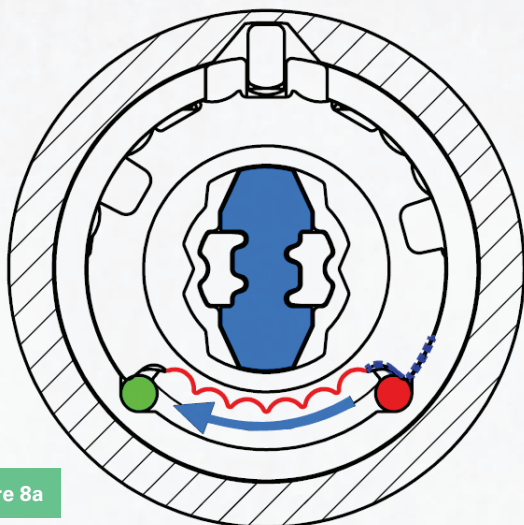


Figure 8a

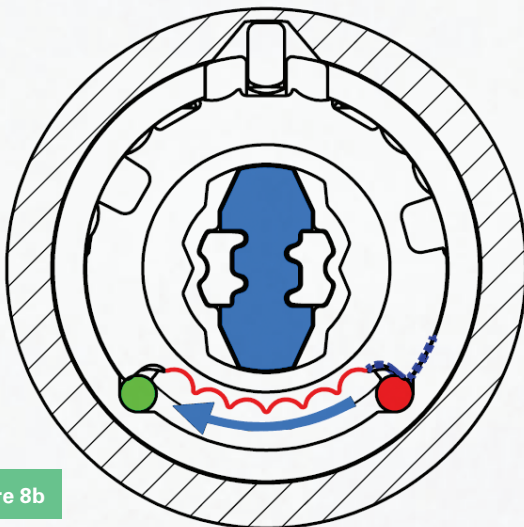


Figure 8b

Figures 8a and 8b. Figure 8a shows the red and green return bars at rest. Figure 8b shows the red return bar meeting the green return bar, blocking and locking the combination discs.

assist with the important task of scrambling the discs prior to key removal.

As stated earlier, when removing the key, the combination of the lock is automatically scrambled by the two return bars. Unless this scrambling occurs, the key cannot be removed. This feature assures that the cylinder doesn't remain unlocked after the key removal. Very important!

More clearly, when the key is turned 90 degrees ($\frac{1}{4}$ turn) clockwise or counterclockwise, the zero discs will rotate 90 degrees together with the key and move one of the return bars toward the other return bar. When both return bars reach one another and are connected, the rotation of all discs inside the cylinder drum is blocked from manipulation and will stop any further rotation (Figures 8a and 8b).

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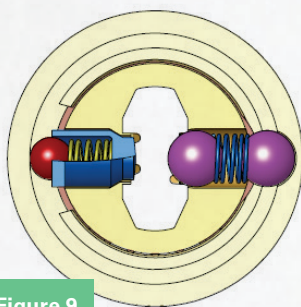


Figure 9

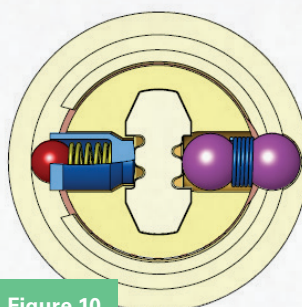


Figure 10

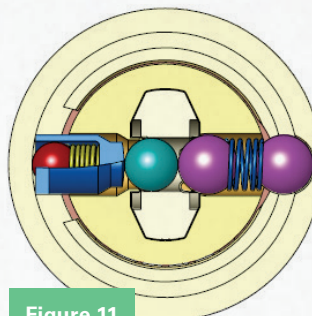


Figure 11

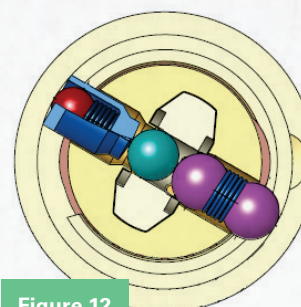


Figure 12

Figure 9–12. Figures 9–12 illustrate how the disc controller operates with no key, key partially inserted, key fully inserted and key turned.

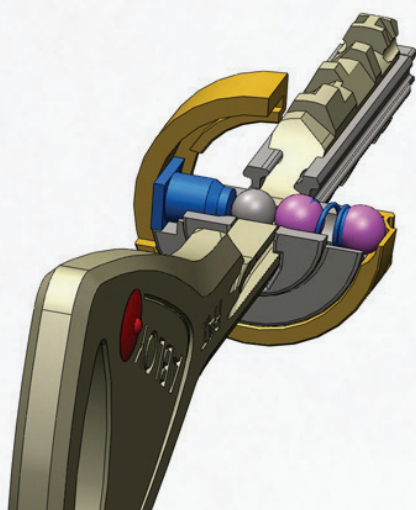


Figure 13. This is a cutaway view of the disc controller with key inserted.

At this point, if the discs correspond to the key cut combination, the locking bar gates of the discs' edges are aligned and form a groove for the locking bar, as discussed earlier. The locking bar can then drop down and move into the groove, allowing the cylinder drum to rotate inside the cylinder housing. The cylinder drum will then start turning together with the key to operate the lock mechanism (opening or locking the lock bolt).

Disc Controller

One of the premier components within any Abloy Protec cylinder is the disc controller. It is the “king” component of

Abloy Protec	Abloy Protec2
♦ 1 Piece Controller in door cylinders only (industrial has 5 piece controller)	♦ 1 Piece Controller in ALL products
♦ Door cylinder discs and industrial discs	♦ Same discs for all products
♦ Controller can be turned as long as ball bearings are not pushed in	♦ Controller has a locking pin inside which is locked until it mates with floating ball bearing in key, then can turn, making it more difficult to pick
X	♦ Controller snaps in place with drum after discs inserted, holding all together
♦ Key profiles in bottom disc as well as upper 0	♦ Key profile is in controller stem as well as bottom disc
X	♦ Bottom anti-wear driver plate virtually stops any key wearing
X	♦ Cylinder snaps into controller; Once discs are inserted & controller snapped in on top, everything is held together as a unit
X	♦ Cylinder snaps into controller; Once discs are inserted & controller snapped in on top, everything is held together
X	♦ Anti-drill plate at bottom of cylinder drum
X	♦ Only one middle 0-disc for all key profiles
X	♦ New flat bottom 0-disc

Figure 14. This chart compares the features of Protec and Protec2.

the cylinder, so to speak. It serves three vital functions.

First, the disc controller helps guide the key smoothly into the keyway and prevents the key from turning prematurely. Thus, it must be fully inserted before cylinder operation. This is accomplished by the ball bearings in the disc controller together with the locking pin. Figures 9–12

illustrate how the disc controller operates with no key, key partially inserted (the locking pin and ball bearings prevent the key from turning), key fully inserted (the larger ball bearing is pressed into the key when the ball bearing of the key pushes the locking pin to the outer circle) and the key turned (the outer ball bearings are pressed inside the collar).

“We all know that risks from organized crime, corporate espionage and terrorism are growing in sophistication.”

Another function of the disc controller is to keep the zero discs in a set position within the disc controller body, ensuring that all discs are turned back to the home position before key removal. As added protection, the disc controller is designed to dismantle if the key is removed when the disc controller is turned 90 degrees. If this occurs, the disc controller can no longer be used and must be replaced.

Finally, the inner shape of the groove in the disc controller must match with the long profile groove of the key (*Figure 13*). This prevents any other key profile but the correct one from fitting into the cylinder. Thus, there is a different disc controller for each key profile.

Things That Go Bump in the Night

Many locks can be bumped at night (or any time of day). But not the Protec2 cylinder. Many manufacturers claim products are “bump resistant,” but Protec2 can claim “bump-proof.” Why? Bumping requires gravity, tumbler pins and springs within a horizontal axis, and the Protec2 lock uses a different method of cylinder operation. Discs spin to eventually align, allowing a locking tab to enter the gates. Gravity and tumbler pins play no part in this operation. Thus, bumping is a moot point.

Let’s look at the differences between the original Protec and Protec2.

Disc Controller Variations

There are several new features in Protec2. The chart in *Figure 14* summarizes these added features in the form of a side-by-side comparison with the original Protec.

The main differences are that the Protec2 cylinders use a one-piece disc controller for all products, as well as the same

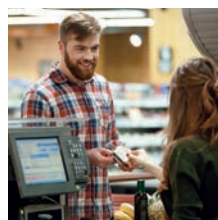
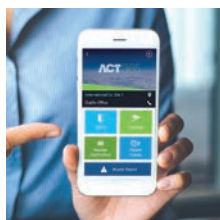
discs for all products. The cylinder drum easily snaps into the controller, and an anti-wear disc and an anti-drill disc have been added as well.

Key Cuts and Profiles

The key cuts for the Abloy Protec2 keys are made at various angles and depths. There are seven cut angles, which are numbered from 0 to 6. Each cut angle corresponds to a disc that is identified

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Key Cuts

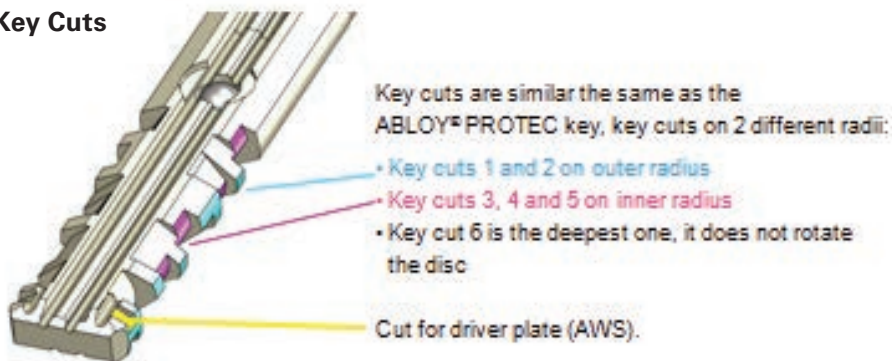


Figure 15. This image shows the fundamentals of the key cuts on the Protec2 key.

Key Cuts:	6	1	4	2	3	1	0	5	2	3	
Discs:	0	6	1	4	2	3	1	0	5	2	3

Figure 16. This is an example of key cuts and corresponding discs in the cylinder.

Key Profile

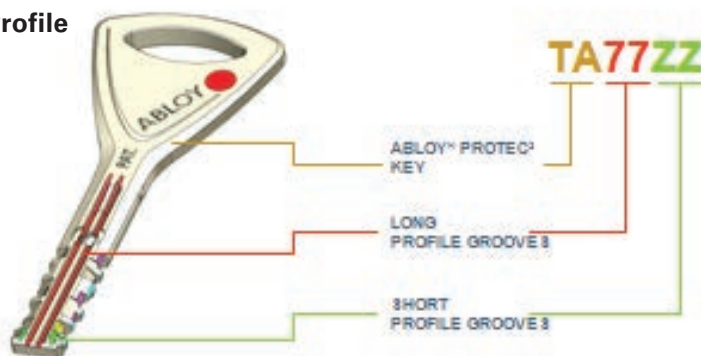


Figure 17. A description of the Protec2 Key Profile coding is shown.

Abloy Protec2 Key Code Decoding Chart											
Cut Number Or Disc	Code Number:										
	0	3	2	9	8	1	5	6	2	2	8
	1	1	4	7	2	7	2	9	1	9	0
	2	5	3	6	1	5	7	1	0	8	1
	3	9	5	1	7	9	4	2	8	0	7
	4	2	0	5	5	3	3	4	3	5	9
	5	4	8	2	6	6	1	3	4	3	3
	6	7	1	3	4	2	6	8	5	1	2

Figure 18. A Key Code Decoding Chart is presented here, turning the key codes into actual key cuts.

“Unlike most pin tumbler locks, the Abloy Protec2 does not rely on placing additional discs into the cylinder (when master keying).”

with the same number. We have seen this in Figure 5. As you will see later, the actual key code *does not* correspond to the disc of the same value.

Now, the important point: There are 10 positions on the key shaft for the cuts. Starting from the tip of the key, there is an uncut portion of 2.57 mm (0-cut), followed by number of 2-mm-wide cuts, depending on the coding of the key, with an axial pitch of 1.5 mm. This means that the cuts are partially overlapping. And, some cuts are made on the inner radius (#1 and #2), and others on the outer radius (#3, #4 and #5). See Figure 15.

The tips of the angled cuts advance in increments of 15 degrees. Protec2 keys can be read visually by identifying the tip of the cut angle. A 0-cut is an uncut portion on the key, while a 6 is cut all the way around. All remaining cuts are formed using precise angles and depths. An example of key cuts and corresponding discs in the cylinder are shown in Figure 16.

Even though there are 11 discs in most of the locks, there are only 10 cuts on the key. The 0 disc at the bottom of the cylinder drum (the first disc in the cylinder drum) is operated by the tip of the key. There exists an indentation (similar to a

cut) nearest to the tip of the key. It is for the driver plate (AWS). Then, the first actual cut on the key operates the first combination disc in the cylinder

Additionally, the Abloy Protec key is reversible, similar to what we have seen in Kaba Gemini and Sargent KESO. The user can insert the key in either direction for actuation.

Different groove shapes in the Protec key are known as “key profiles.” So, in addition to key combination cuts, keys can be differentiated by various longitudinal grooves on the key shaft surfaces. Within the cylinder, respective elements must be used to match with these grooves in the keyway to allow only a key with the correct cross section to enter the cylinder.

Every Abloy Protec key has two profile shapes on the key shaft. The long profile groove runs through the entire key shaft, and the matching shape appears in the guide rail of the disc controller. In addition, there is a short profile shape in the tip of the key. The matching shape for this is in the keyway hole of the bottom 0-disc (*Figure 17*).

To reinforce the concept of “reversibility,” the majority of the Protec2 key profiles are symmetrical, so the key can be inserted into the cylinder in both positions. Symmetrical profiles are generated by using the same profile grooves on both sides of the key shaft. For special purposes, some unsymmetrical key profile shapes are also available.

Key Cut Decoding

Now we enter the realm of Sherlock Holmes for decoding sophistication. Actually, it’s quite elementary.

To decode an existing key, simply refer to the Abloy Protec2 Key Code Decoding Chart shown in *Figure 18*. All Protec2 keys are supplied from the factory with a code card containing a 10-digit code number. The code number can be

decoded into the physical key cuts by using the chart.

The decoding chart has 10 columns to the right of the heavy black line. Each column will convert that number into a cut value. A separate column is used for each of the 10 digits in the key code number.

Let’s do an example, where the key code happens to be: **5 8 1 2 9 3 6 4 9 7**.

Locate the “5” from the first column to the right of the black line. It corresponds

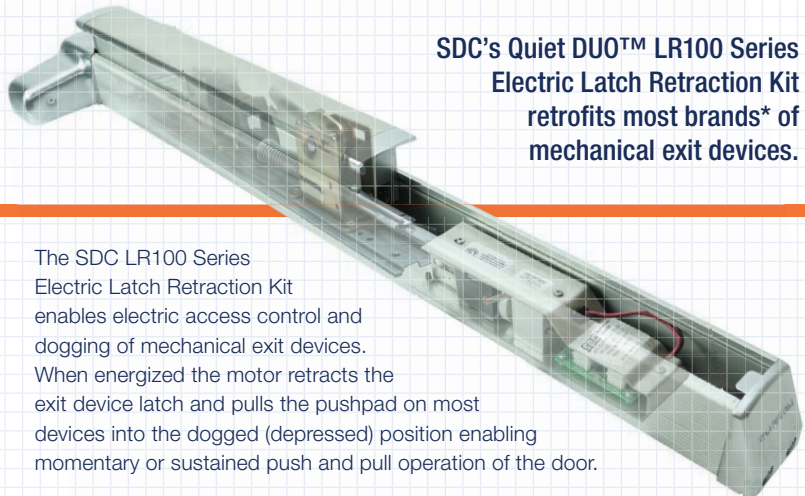
to a 2 cut at the left. Then proceed to the second column. The code of “8” corresponds to a 5 cut, and so on.

Thus, the Protec2 key cuts for this example code are: **2 5 3 1 3 4 0 5 1 3**.

Anti-Wear System (AWS)

There is an anti-wear disc located at the very back of the cylinder. Some may call it a driver plate. Its purpose is to prevent key wear. There is also a key cut to coordinate

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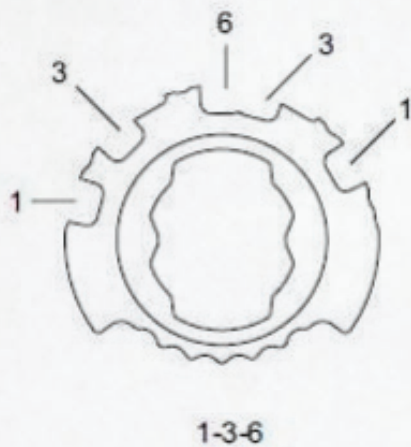


Figure 19. This master disc is known as the 1-3-6 master disc.

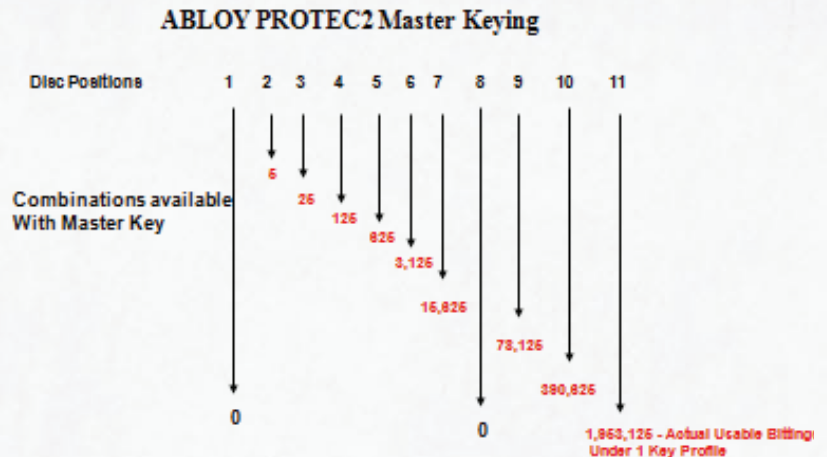


Figure 20. This chart shows how master keying a Protec2 cylinder can produce nearly 2 million useable bittings.



Figure 21. The Abloy Protec2 LFIC retrofit for Yale is seen in its IC mortise housing.



Figure 22. The Protec2 Yale retrofit core is shown.

with the driver plate near the tip of the key. This is a new addition to the Protec2 cylinder that was not present in previous version of Protec.

Master Keying Capabilities

Unlike most pin tumbler locks, the Abloy Protec2 does not rely on placing additional discs into the cylinder. Instead, we will use master discs that are “multi-gated” (Figure 19). This means that additional gates are added to these master discs to allow a number of possible ways that the locking bar can drop into the disc. That translates into more than one key operating a cylinder. Master discs are available with 2, 3, 4, 5 or 6 locking bar gates on the discs. Most cylinders use only three to four master discs within a single cylinder. There exist a total of 57 master discs possible to choose from. This is why there are 1,953,125 million possible change keys available in any one Abloy Protec system (Figure 20).

LFIC Retrofits

As of this writing, there exist two interchangeable core retrofits for the Abloy Protec2 cylinder: the Yale retrofit (CY416T in Figure 21) and the Schlage retrofit (CY419T). They can easily be identified by looking to the rear of the LFIC. If it con-

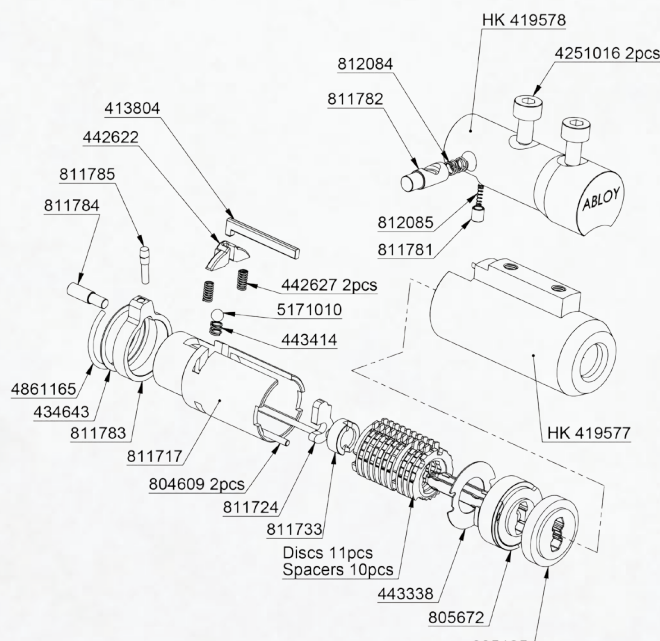


Figure 23. Shown here is an exploded view of the Protec2 Schlage retrofit LFIC.

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Figure 24. The Protec2 operating key (bottom) is compared to the LFIC control key (top).



Figure 25



Figure 26

Figures 25-29. There are several tools vital in the proper servicing of the Protec2 cylinders: the Key Decoder (Figure 25), Key Cutting Machine (Figure 26), Key Stamping Guide (Figure 27), Assembly Spring Tool (Figure 28) and Disc Controller Tool (Figure 29).

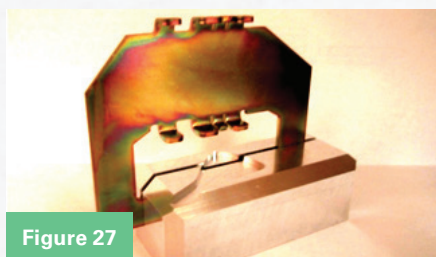


Figure 27



Figure 28



Figure 29

tains a small disk-cam as the control lug, it is the Abloy Yale retrofit. If it contains the small button as the control lug, it is the Abloy Schlage retrofit. Separate housings for both are available. Figure 22 illustrates the — yes, you guessed it! — Yale retrofit. But some may be wondering about the Schlage retrofit. An exploded view of it is shown in Figure 23.

The control keys will operate the device in the back of each core by the extended prongs, as seen in Figure 24. The topmost key is the control key, and the key beneath it is the operating key.

Tools

There are a number of tools vital in the proper servicing of the Protec2 cylinders.

Key Decoder: The key decoder #LT214 is for reading Protec2 cut keys. It indicates the cut code and the code number. When the key is inserted into the key decoder and turned 90 degrees clockwise, the key cut number can be read in the lower window and the code number in the upper window. It can also be used for both 9-disc and 11-disc cylinders (Figure 25).

Key Cutting Machine: Abloy Protec2 keys can be cut with manual key cutting machines Abloy #LT103 (110V) and Abloy #LT104 (230V) (Figure 26).

Key Stamping Guide: With key stamping guide LT206, separate stamps are needed; # 8611080 for numbers 0–9 and #8611120 for letters A–Z (Figure 27).

Assembly Spring Tool: Assembly Spring

Tool #327168 can be used to hold discs in place when combining (Figure 28).

Disc Controller Tool: #LT227 specially crafted German pliers are used when working with the disc controller (Figure 29).

Combining the Protec2 Cylinder

Below is the 18-step procedure for combining the Protec2 cylinder:

1. Lay out all discs in order on the Protec2 Assembly Worksheet. Remember to load all discs into the cylinder with the embossed side down (Figure 30).
2. Hold the cylinder drum into your left hand with the space for discs upward and insert the spring assembly tool to stabilize the discs as they are inserted.
3. Place the drilling protection plate into the recess at the bottom of the cylinder drum (note: DIN/Europrofile cylinders do not have drill protection in the cylinder drum due to the different cylinder construction).
4. Place the assembly spring into the groove of the cylinder drum and guide it with your thumb.
5. Put the head of one return bar between the spring and the inner surface of the drum, and push the return bar sideward into the groove for the locking bar. Then push the return bar axially into the bottom of its groove. Repeat the same procedure with the other return bar.
6. Next, place the driver plate into the drum onto the assembly spring and

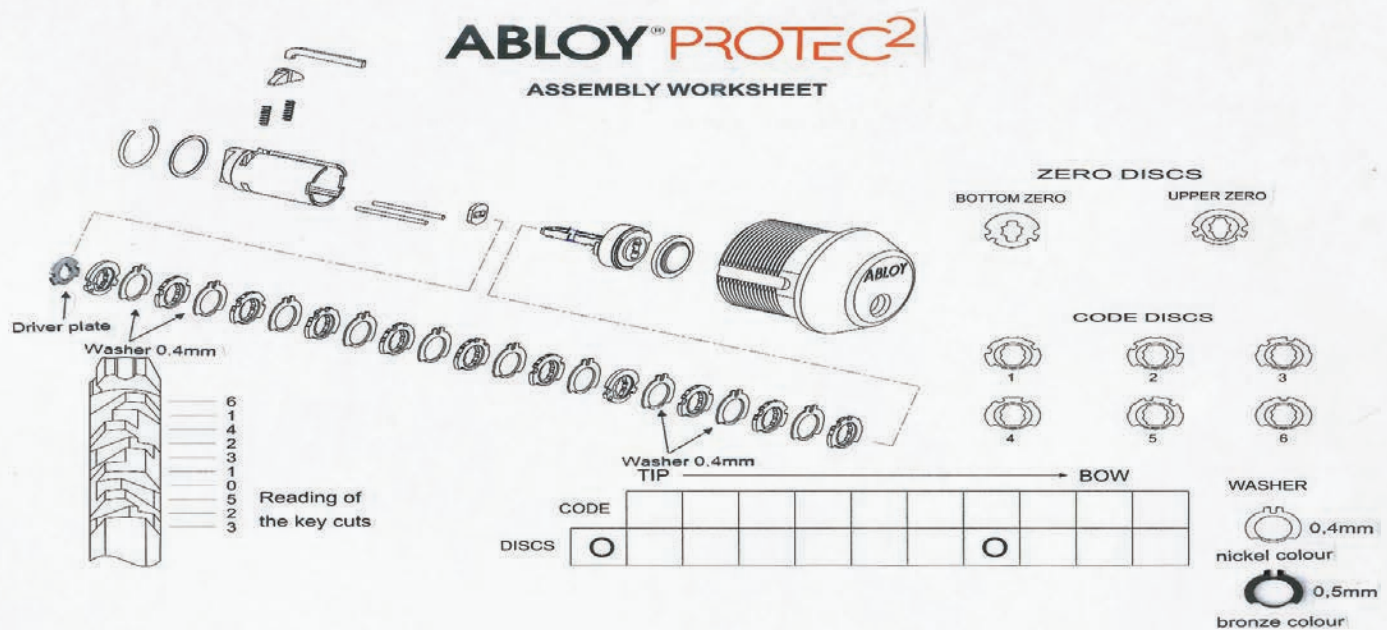


Figure 30. Lay out all discs in order on the Protec2 Assembly Worksheet.

then the bottom 0-disc above the driver plate. Note the rotational position of the driver plate and all discs since the wide opened area at the edge of the discs must be toward the return bars.

7. Then load the combination discs and washers from your worksheet onto the assembly spring according to the keying information. Press the assembly spring downward into the drum by the discs and washers every time a new part is added on the top. The first and second washer after the bottom 0-disc are the thinner ones (0.4 mm) that are bright nickel-plated. The next washers must be the thicker ones (0.5 mm), which have the same color as the discs.
8. Continue building up the disc package until the middle 0-disc, the 8th disc, has been placed onto the assembly spring.
9. Then pull the assembly spring out from the cylinder to the side via the groove of the drum. While pulling the spring, press the disc package with

your forefinger to prevent any discs from coming out of the drum. When the spring has been removed from the drum, place the loaded discs down into the bottom of the drum.

10. The rest of the discs and washers can now be loaded into the drum. The washer above the upper 0-disc is again the thinner one, and the next washer is also thinner. The last washer is normally a thicker one.
11. When the last combination disc has been inserted onto the disc assembly, it should be directly on the level of the upper edge of the cylinder drum. If the top disc comes above the upper edge of the drum, change the needed amount of spacers above the middle 0-disc to thinner ones. When adjusting the filling height, the top disc surface can be left slightly *under* the cylinder drum edge level, but *never above it*. This will allow each disc to move independently and ensure smooth operation of the cylinder (Figure 31).
12. Check that the rectangular hole of

the drill protection in the bottom of the drum is in a horizontal position against the keyways of the discs. This is necessary to allow the disc controller fork to enter this hole.

13. Then slide the disc controller into the keyway and the top of the cylinder. Press the disc controller into the cylinder drum so that the embossed projections fit into the corresponding grooves in the sides of the disc controller.
14. The assembly is now ready to be checked with the correct key. When the key is turned 90 degrees, either clockwise or counterclockwise, the locking bar gates in the combination discs should be aligned in the side opening in the drum for the locking bar. **Note! The disc controller is designed to dismantle if the key is removed when the disc controller is turned 90 degrees. After this, the disc controller can no longer be used.**
15. Now oil the cylinder assembly through the opening in the drum.

16. Install the stopper piece springs, the stopper piece and the locking bar into their places on the side of the cylinder, and hold them.

17. Then slide the profile plate holder/pliers (Tool LT224) into the keyway and add the profile plate onto the disc controller. Hold the inner cylinder assembly in a vertical position and carefully slide the cylinder housing onto the assembly. The stopper piece must be pressed against the cylinder center to make it possible for it to slide into the cylinder housing.

18. When the inner parts are fully inside the housing, the profile plate holder tool can be drawn out from the keyway. Then the cylinder function can be checked by the correct key, and holding the cylinder drum by the finger inside the housing.

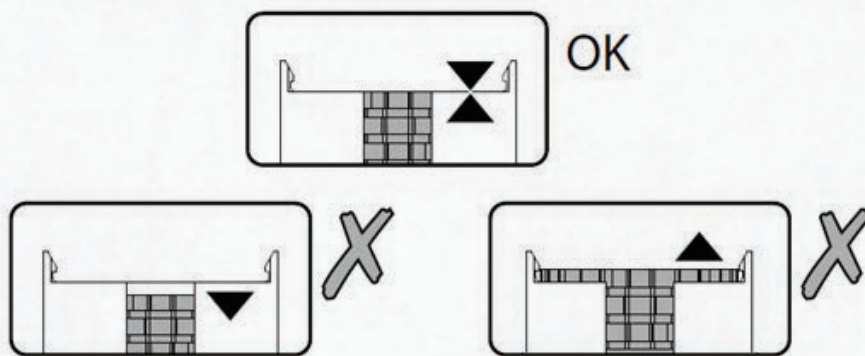


Figure 31. Disc heights within the Protec2 cylinder drum are shown.

Cylinder Operation

It's now time to discuss cylinder operation. It may seem odd that we are explaining how the Protec2 cylinder operates at this late stage in the game. However, had we done this at the beginning of the article, it would have made much less sense to many. Knowing the components and how they work together gives us the insight to visualize the cylinder in action.

After fully inserting the key into the keyway (either direction), you will turn the key 90 degrees ($\frac{1}{4}$ turn) clockwise or counterclockwise. Now, the zero discs will be rotating 90 degrees together with the key and move one of the return bars toward the other return bar. When the return bars reach each other and are connected, the rotation of all discs inside the cylinder drum will stop.

At this point, if the discs correspond to the key cut combination, the gates of the discs' edges are aligned and form a groove for the locking bar to drop down into them. The locking bar will then move into the

groove and allow the cylinder drum to rotate inside the cylinder housing. The cylinder drum will then start rotating together with the key to operate the lock mechanism (opening or closing the locking device).

Both the combination discs and the master discs rotate in the cylinder drum from 0 to 75 degrees depending on the disc number and the cut code.

For clockwise operation, the key will turn 75 degrees before starting to turn disc 5. The key will then rotate the disc 15 degrees before the return bars reach each other and the rotation of discs is stopped.

For counterclockwise operation, the key turns 45 degrees before the cut contacts disc 5. Then the key rotates 45 degrees together with the disc before the return bars reach each other and stop the rotation. In the locked position, the 0-discs hold the locking bar, the return bars and the combination/master discs in their places.

Conclusion

It started with a Finnish inventor in the early 1900s and developed into the sophisticated rotating disc tumbler system we know today. For those applications requiring an elevated level of high security, the Abloy Protec2

cylinders may be the answer. Even though we are dealing with 21 discs and 13 additional parts, the cylinder can be easily combined... if you know how. But, then again, isn't that true of most locks? So, as has been said, "It's as easy as loading a PEZ dispenser!"

Thanks are extended to Marty Day, retired, Abloy Canada and Ray Marquis, vertical market manager at Abloy USA, for information presented in and in preparation for this article. ☺



William M. Lynk, CML, CPS, 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.



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The Vendetta, Op-Checks and Days Gone By

Always use a spanner wrench on BEST mortise locks — and check your work.

By Tony Wiersielis, CPL, CFDI

IF YOU'RE A REGULAR READER OF THIS COLUMN, YOU'VE PROBABLY SEEN MY warnings regarding what happens if you don't use a spanner wrench on BEST mortise locks. Most likely, you've seen it more than once, as that's become a vendetta for me.

For those who've missed it, here's your chance to save yourself the trouble and embarrassment of not using the wrench and doing a callback, for free, to correct it. I decided to write this because, over the last few weeks, I ran into the same issue over and over again on locks that were installed by other trades.

Figure 1 is the wrench. Specifically, a BEST KD316 spanner wrench, which is required for the installation of BEST 8K cylindrical locks as well as 45H mortise locks. This tool is almost identical to the Schlage wrench, which used to be included in the box with their heavy-duty cylindrical knobs (not sure if they still are). *Figure 2* shows a Unican wrench, which will work, but it will not apply as much torque because of its shorter length. Any type of spanner that fits (from any manufacturer) will work, but I prefer the BEST wrench.

The KD316 is not packed with each lock but can be purchased from BEST distributors. The site craftmasterhardware.com had them for around \$6 apiece when I checked recently. You really want to have at least one or two per locksmith/installer in your crew. They last a long time, but it's a good idea to have a spare, as Murphy's Law tends to come true — particularly near the end of a big job. Plus, they occasionally "grow legs" and walk away.



Figure 1. This image shows a BEST KD316 spanner wrench.



Figure 2. A Unican wrench will work, but it will not apply as much torque because of its shorter length.



Figure 3. The installer nearly had only hand tightened on the "rose ring" (red arrow).



Figure 4. The author is holding down the lever to demonstrate how you might find it in the worst-case scenario.

The Issue and the Answer

The job involved swapping out escutcheons on 45H locks. As I moved from door to door, I noticed that the installer nearly always had only hand-tightened on the “rose ring” (red arrow in *Figure 3*). If you do this, what sometimes happens is that the rose ring slowly loosens through normal use of the lever.

The lever then starts to bind against the ring, causing it stay in the down position. In *Figure 4*, I’m holding down the lever to demonstrate how you might find it in the worst-case scenario. This will also cause the latch to remain retracted.

Let me assure you that this is not a problem with the lock; this is an issue with the installer, who blithely walks away thinking the installation is fine and dandy. If you use the spanner wrench as intended, the rose rings rarely come loose. If you don’t, it’ll be your callback.

Look back at the rose ring with the arrow in *Figure 3*. This one was hand-tightened. Notice the small gap between the lever and the ring. Now look at the same lock in *Figure 5*. I used the wrench to tighten down the rose rings with the lever still attached. Notice the large gap between the ring and the lever now. If you were to grab the le-



Figure 5. Notice the large gap between the ring and the lever.

ver and push and pull it, you’d feel a lot of in-and-out play, which shouldn’t be there.

One of the things I’ve learned over the years is that when parts become loose and are not attended to, the problem gets progressively worse and then often fails completely. The best example of this is loose hinge screws. Eventually, the door rubs so badly that it won’t close and latch at all. A lot of times, all it takes is tightening the screws to solve the problem — unless the constant movement caused the screws and holes to strip. Then you have complete failure.

On the lever above, you need to close the gap to stop the play. To do this, you need to loosen the set screw on the inside lever and move the lever closer to the rose ring. I highly recommend you do this the way I’m about to show you. If you do, you might uncover a few other errors in the installation that are easy to correct.

How to Fix It

First loosen the set screw on the inside lever, pull it off and then pull the outside lever and spindle out of the chassis. Then take a look at the point where the inside and outside spindle come together. *Figure 6* shows too much of a gap between the

spindles, and *Figure 7* shows them butted against each other. Having the spindles as you see in *Figure 7* is a dangerous mistake. Swivel spindles are designed so that the outside or locked spindle stays stationary and the inside or unlocked spindle can move freely and retract the latch.

If you snug the spindles against one another, install the lock and neglect to do a complete operation check before leaving, this is really bad karma. If the outside hub is locked and the inside spindle is jammed against the outside spindle, it won’t turn and your customer will be locked in. Panic often ensues, and you will probably be called uncomplimentary names.

What’s worse is that this problem might not manifest itself right away. Suppose you have a couple that leaves for work every day at the same time. One of them locks the door by throwing the deadbolt, and they open it when they come home. Some time goes by, and eventually the husband calls out sick and stays home, and his wife locks the door behind her on the way to work. If the husband tries to open the door to check the mail, he’s locked in because the spindle won’t turn.

Here’s what you should do whenever you install or service a mortise lock that uses a swivel spindle: Turn the inside spindle until it butts against the outside spindle. Then back it off one complete 360-degree turn. Doing that pretty much guarantees you won’t have any lock-in issues. Now the inside and outside spindles will turn independently of the other.

Let’s go back to that gap in *Figure 5* that we want to close. So you’ve tightened the rose rings and checked the spindles, and you’re getting ready to slide the inside lever on and tighten it. Before you put the inside lever on, check if the indentation mark you see in *Figure 8* is on the side of the spindle into which the set screw will bite into. If it is, loosen the spindle a quarter turn, as in *Figure 9*.

You do this as you tighten the set screw so it doesn't find the old indentation and follow it. Remember that the rose rings were hand-tight, not properly tightened, so the original indentation is in the wrong place. If you're not paying attention and your screw finds the old indent, you'll still have the gap. By doing the quarter turn, the screw has a clean surface in which to imbed itself.

What I mean by the set screw "following" the indentation is similar to using a center-punch before you drill a hole in a piece of metal. The tip of your bit will fit into your punch mark and tend not to move as you start the hole, following your mark. Obviously, if your mark is off, your hole will be too. This is probably an antiquated term, but I learned it years ago.

This is the way I install these levers, and I never have an issue: Standing on the inside of the door, I hold the outside



Figure 6

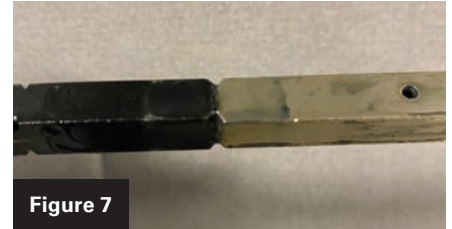


Figure 7

Figures 6 and 7. Figure 6 shows too much of a gap between the spindles, and Figure 7 shows them butted against each other.

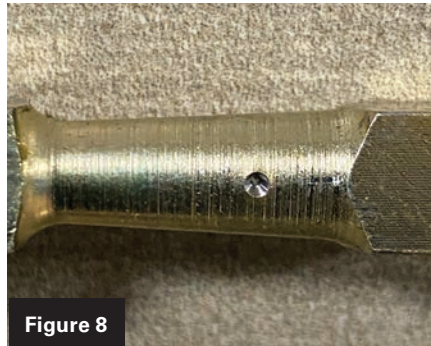


Figure 8



Figure 9

Figures 8 and 9. Check to see if the indentation mark you see in Figure 8 is on the side of the spindle that the set screw will bite into. If it is, loosen the spindle a quarter turn, as in Figure 9.



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Figure 10. A 1959 *Locksmith Ledger* article was about government tests of various safes and insulated files during an atomic blast.

lever against the rose ring and hold my hip against the inside lever as I tighten the screw. Now, I'm not putting a lot of pressure on either lever; I just want them to stay still as I turn the set screw.

Operational Checks: Before and After

Whether you're doing a new installation on a blank door or a repair, you should check the operation of the lock in every phase of its intended use. My first boss used to say, "I don't care if all you do is tighten a screw on a face plate. Check that everything functions properly before you go."

I can't tell you how many times I've come across the following: a cylinder set screw not tightened on a mortise lock. Or a set screw on a knob or lever not tightened; they come off in the customer's hand. Or the door doesn't latch. Or the door latches but can't throw the deadbolt. The killer is, a few times I've been called to fix a "lock won't lock" where there's no strike hole or strike for a newly installed deadbolt. Or, the hole isn't deep enough, and the deadbolt can't fully extend and thereby "deadlock"



Figure 11. The author found this guide for hand washing on a wall at one of his workplaces.

Think about this: How much time does it take to check your work? Go through everything that the lock is supposed to do and make sure it can — and easily, too.

On a mortise lock: Is the latch going all the way into the strike? Can you throw the bolt while the door is closed? Does it open easily? Is anything rubbing against the frame? Will the deadbolt retract with the latch when you push down the lever, if that's a function? Is every screw tight and possibly installed with thread locker? You get the idea. A simple op-check should take a minute or two to do and will save you from callbacks down the line.

Note that I said *before and after* above. You should also get into the habit of checking the operation of those locks you're *about* to service. Why? First, customers sometimes speak in riddles because they're not sure what they're talking about. That's understandable; it's our profession, not theirs.

Besides, have you ever seen — like I have — someone wiggle their key for 30 seconds before they get into their apartment building? If you ask them if

they've been having trouble with their key, they'll smile and say, "No, it works fine." The lesson here is we, the professionals, see what the layman doesn't.

A quick op-check will discover other things that are wrong that the customer doesn't notice. These can become reasons to recommend replacement instead of repair. It's also important to ask the customer what they see as the problem with the lock, rather than just working on what they think is wrong. I usually say this to the customer, "Tell me what you feel the problem is, and I'll help you solve it." The answer might be, "Well, I have to push the door hard to lock the deadbolt." Now you know what to look for.

There's another reason to do a preliminary op-check: avoiding accusations. Have you ever heard, "Well it didn't do that before you touched it?" Here's what happened to me many years ago.

I went on a job where the woman had lost her only key for her cylindrical knob. I checked her ID, got her in, rekeyed her lock and put it back on. What I didn't notice was her latch was backwards; it was an in-swinging door, and the bevel on the latch faced in, not out.

When I had her try the keys, she pulled the door shut and it wouldn't latch. Right away, it became my fault that the door didn't latch automatically. Obviously, every time she used it in the past, she *had* to have turned the knob as she closed the door, but she didn't understand that. I pointed out the problem, and she swore it was my fault and that I had switched the latch around. When I showed her how the paint on the latch was intact because I never removed it, a somewhat dim bulb lit up. If I had checked how the door closed and latched when I got there, I could have avoided the angst. My "situational awareness" wasn't as well-honed as it is now, and if it is, it's the result of years of meeting people like that.

Days Gone By

As I'm writing this in March 2020, the COVID-19 virus is raging, especially in New York. Hopefully, we are winning the fight against this menace, but this is a time when fear is ever-present. By an odd coincidence, I was reminded of something that struck fear in the hearts of Americans many years ago.

I was looking through my collection of *Locksmith Ledger* magazines yesterday and picked up the April 1959 issue. I noticed the title of one of the articles, which you can see circled in circled in *Figure 10*. For the younger set, an "A-Blast" is the detonation of a nuclear weapon over a target.

The article was about government tests of various safes and insulated files during an atomic blast from a "better than average" bomb of 30 kilotons.

If anyone wants to read the full article, email me at aew59@juno.com with "A-bomb test" in the subject line, and I'll send it to you.

This was one of the things Americans were afraid of back then: nuclear war. Even before that, there was polio, the disease that paralyzed Franklin Roosevelt as an adult. Polio tended to spike during the summer months and mainly affected children, some of whom lost the ability to breathe on their own. Google "iron lung" and look at the pictures of the machines that kept these children alive.

In 1955, the Salk polio vaccine was created. And then the Sabin polio vaccine was developed five years later. Through aggressive distribution and immunization of children all over the world, polio was eradicated; there were

just 175 cases of it in 2019.

Why am I telling you this? In this time of fear and anxiety, think about what we accomplished. We wiped out a disease that was a scourge on the world. And we'll do the same with COVID-19. Be careful, take precautions and wait it out. We'll get through this.

Figure 11 is a guide for hand washing I found posted on the wall of that college I'm always writing about. Hope it helps. ☺



Tony Wiersielis, CPL, CFDI,

has more than 30 years of experience and has worked in most phases of the trade throughout the New York metropolitan

area. He was named *Keynotes* Author of the Year for 2016.

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A New Normal

By Jim Hancock, CML, CMST

AS I HAVE MENTIONED PREVIOUSLY, WE WRITE THESE ARTICLES A couple of months in advance of their publication in *Keynotes* or *Safe & Vault Technology*. So, this would normally be the issue where I would be telling you how absolutely great SAFETECH 2020 was (and it would have been) and how even more wonderful ALOA 2020 will be (and it will). Obviously, there will be no prognosticated hyperbole regarding SAFETECH or classes at the training center in Dallas, or anything else.

We — as a nation, as a world — are experiencing a situation that has only happened a handful of times in the history of the world. Every time (this virus, the two World Wars, the Spanish flu epidemic of the early 1900s, the Great Plague) is different in terms of how we as a people react and, more critically, how we adapt to whatever the new normal is for now or moving forward.

While we all struggle to deal with shutdowns, sheltering in place, the greed of some people and the fear of others, life does indeed go on. And while maintaining our distance from one another to flatten that curve (as they say) has proven to be the prudent course, we must also be prepared to move forward and get back to work once this crisis is over.

While some business models will certainly falter, our industry generally thrives during these times, as people who have “stuff” will spend money initially to help protect it and then spend equally after the initial fear to protect what they acquire. To this end, we must be prepared to provide service to the public that is not only fast and priced correctly (*no gouging!*) but that is also done correctly for the security of the public.

This is where SAFETECH and the ALOA Convention usually come in by offering training to newbies in the industry while allowing others to enhance their knowledge. Sadly, that didn't happen with SAFETECH, and it's too early to tell about other training from any source at this point.

A New Option

ALOA has partnered with CMoor Group (SecurityCEU) to produce a version of the Fundamentals class online. It will come with a kit and hardware to use for various lessons, and the final exam will consist of a qualified CML administering a series of hands-on exercises and a written quiz. This training is now live.

Another way we would like to help our members and the industry in general is to offer a short video series on basic knowledge and a few of the most common tasks that locksmiths perform. We would like to offer these in a live format to allow those who need to see the task performed hands-on or ask questions to do so with a live instructor. These videos will be free of charge to members during this critical time and will be available for a nominal fee for non-members. If we can obtain funding from manufacturers and vendors, they may remain free beyond this unique time in our history. They will be scheduled on the same day of the

“ALOA has partnered with CMoor Group (SecurityCEU) to produce a version of the Fundamentals class online.”

week at the same time of day for ease of scheduling for participants.

What we need are ideas on what you would like to see. Again, at least at the outset, it would be pretty basic tasks (safe combo changing, SFIC repinning and math, removing a Kwikset cylinder with the proper tool, handing of a door). We always ask for ideas on things like this, and I have asked for this specific thing in the past with little response. Take the time to drop us a line at education@aloea.org and tell us what you would like to see. If it is doable while we are quarantined — or easy enough when we get back in the office — we will be happy to do it.

Take care of yourselves... and each other. ☺



Jim Hancock, CML, CMST, is ALOA's education manager. You can reach him at jim@aloea.org or (214) 819-9733.

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www.gardall.com

General Lock

Phone: 858-974-5220
Fax: 858-974-5297
www.generallock.com

Global Tecpro, Ltd.

Phone: 86 152 2033 2799
www.gtl.tw

Guru Lock Network

Phone: 888-560-9947
Fax: 866-684-5559
www.gurulock.com

Hollon Safe

Phone: 888-455-2337
Fax: 866-408-7303
www.hollonsafe.com

HPC/Hudson Lock

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Fax: 978-562-9859
www.hudsonlock.com

ICK Product, Ltd.

Phone: 604-285-0387
www.ickproduct.com

KEYLESS LLC.

Phone: 502-442-2380
www.ikeyless.com

Inkas Safe Mfg.

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Fax: 416-744-3535
www.inkas.ca

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www.instafob.com

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internationalkeysupply.com

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Phone: 718-257-9600
Fax: 718-257-0973
www.jetkeys.com

JMA USA

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Fax: 817-701-2365
www.jmausa.com

KABA ILCO Corp.

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Fax: 252-446-4702
www.kaba-ilco.com

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www.kenstanfixtureservices.com

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Fax: 909-923-0024
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www.keydiy.com

KEYINCODE, LLC

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https://keyincode.com

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Lockey USA

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www.lockeyusa.com

Lock Labs, Inc.

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www.locklabs.com

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Fax: 877-887-4958
www.locknet.com

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Fax: 408-516-0505
www.lockpicks.com

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www.locksmith.cz

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Fax: 858-549-0949
www.luckyline.com

Master Lock Company LLC

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Fax: 414-444-0322
www.masterlock.com

Medeco Security Locks

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Fax: 540-380-1768
www.medeco.com

National Auto Lock Service Inc.

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Fax: 650-875-0123
www.laserkey.com

Oasis Scientific, Inc.

Phone: 864-469-0919
www.oasisscientific.com

OBSTAR Technology Company, Ltd

Phone: 86-755-86707161
www.obdstar.com

Olympus Lock Inc.

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Fax: 206-362-3569
www.olympus-lock.com

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Phone: 888-562-5565
Fax: 661-294-3097
www.paclock.com

PDQ Manufacturing

Phone: 717-656-5355
Fax: 717-656-6892
www.pdqlocks.com

Philadelphia Hardware Group

Phone: 858-642-0450
Fax: 858-642-0454
philhardware.com

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Phone: 859-885-9411
Fax: 859-885-3063
www.sargentandgreenleaf.com

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Fax: 949-261-7326
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Fax: 514-447-1024
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Fax: 718-392-8944
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Jerry Hernandez Owner Operator <07/20>

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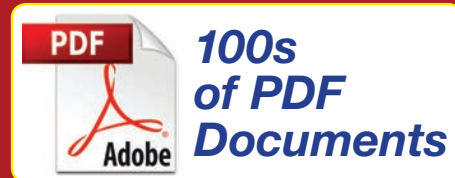
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Each ad will run for three consecutive issues. For blind boxes, there is a \$10 charge for members and nonmembers. All ads must be submitted in a word document format and emails to adsales@aloea.org by the 15th of the month two months prior to issue 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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Big Red	page 31	www.bigredsafelocks.com	(877) 423-8073
Bullseye S.D. Locks	page 31	www.bullseyesdlocks.com	(800) 364-4899
Capitol Industries	page 21	www.capitolindustriesinc.com	(800) 567-0451
ClearStar Security Network	page 59	www.clearstar.com	(360) 379-2494
Detex	page 11	detex.com/train28	(800) 729-3839
Framon	page 23	www.framon.com	(989) 354-5623
Hollon Safe	page 1	www.hollonsafe.com	(888) 455-2337
IDN	page 19	www.idn-inc.com	
Jet Hardware Mfg. Co.	back cover	www.jetkeys.com	(718) 257-9600
KABA ILCO	inside back cover	www.adusa.us/smartpro	
Locinox	page 53	www.locinoxusa.com	
Lockmasters	pages 14-15	www.lockmasters.com	(800) 654-0637
ScopePlus Labs	page 31	www.scopelab.us	(386) 427-2462
Security Door Controls	page 43	www.sdcsecurity.com	(800) 413-8783
Security Lock Distributors	inside front cover	www.seclock.com	(800) 847-5625
Southern Lock & Supply	page 55	www.southernlock.com	(727) 541-5536
The Door Guardian	page 39	www.thedoorguardian.com	(800) 704-7037
Turn 10 Wholesale	page 3	www.turnten.com	(800) 848-9790
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