A LOCKSPORT PRIMER

LOCKSPORT INTERNATIONAL BRINGS YOU A BRIEF INTRODUCTION TO LOCK PICKING

LEARN TO PICK LOCKS WITH A VISUAL STEP-BY-STEP GUIDE

LEARN HOW TO RE-PIN A LOCK, MAKE TOOLS, AND MORE!

TO LEARN MORE VISIT WWW.LOCKSPORT.COM

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INTRODUCING LOCKSPORT INTERNATIONAL

From all of us at Locksport International, I'd like to thank you for picking up this guide. We hope you will find it helpful as you take on the new challenge of learning to pick locks. But first, allow me to tell you a little about LI.

In early spring of 2005 Josh Nekrep (digital_blue on lockpicking101.com) approached Kim Bohnet (Varjeal, site administrator on lockpicking101.com) with the idea of starting a club with the purpose of bringing lockpicking enthusiasts together and promoting the sport/hobby with face-to-face interaction. At the time there were a couple large regional clubs (SSDeV in Germany and TOOOL in The Netherlands) but there was no broad-based club. Kim and Josh saw a need for an organization that would be open to members all over the world and set about making it happen. It was felt that it would be easier and more effective for individuals to start a local lockpicking club if much of the groundwork were already laid for them, and if they had the opportunity to share resources with other associated clubs. Kim and Josh quickly recruited Devon McDormand (frostbyte on lockpicking101.com) to sit as Treasurer. After much discussion (5 minute conversation on MSN) it was decided that Kim would act as President of the association and Josh would take the role of Administrative Director. The term “Locksports” was adopted as a means of distinguishing what hobby/sport lockpicking enthusiasts do from what locksmiths do. The three founding members set about laying the foundation for what they hoped would someday be a large organization. A short time later, Matt Fiddler and Doug Farre were brought on to sit on the board of directors. Since then, LI has worked to bring locksport enthusiasts together. As individuals come forward to pioneer locksport groups in their area, LI continues to grow and organize.

Locksport is a fun, challenging hobby, and one that is gaining ground around the world. Members gather together to learn from each other, share tools and locks, research security vulnerabilities, and most of all, have fun!

If you are interested in starting an LI chapter in your area, see the "How To Get involved With LI" section at the back of this guide.

THE CREDO OF THE LOCK-PICKER

YOU MAY ONLY PICK Locks THAT YOU OWN, OR those TO WHICH YOU’VE BEEN GIVEN EXPLICIT PERMISSION TO PICK By THE RIGHTFUL OWNER

LOCKSPORT IS AN HONEST, ETHICAL, AND LEGITIMATE HOBBY. UNFORTUNATELY, THE WHOLE WORLD HASN’T FIGURED THAT OUT YET (THOUGH WE’RE WORKING ON IT!). BECAUSE THE LAY PERSON HAS A TENDENCY TO PERCEIVE WHAT WE DO AS SOMEHOW NEFARIOUS, IT IS EXTRA IMPORTANT THAT WE COMMIT TO FOLLOWING A STRICT CODE OF ETHICS. FOR THIS REASON, THE ABOVE CREDO IS NON-NEGOTIABLE IN THE LOCKSPORT COMMUNITY. LOCK PICKING SHOULD NEVER, EVER BE USED TO ILLEGAL OR EVEN QUESTIONABLE PURPOSES.

PLEASE DO NOT MISUSE THIS INFORMATION. WE ASSUME NO RESPONSIBILITY FOR YOUR ACTIONS, AND IN NO WAY CONDONE IMMORAL ACTIVITY. HELP KEEP LOCKSPORT FUN FOR ALL BY FOLLOWING STRICTLY THE ONE RULE.
A PIN TUMBLER LOCK IS COMPOSED OF SEVERAL BASIC COMPONENTS. THE OUTER CASING IS CALLED THE SHELL. INSIDE A SHELL IS A PLUG. THE PLUG HAS A KEYWAY - THE SLOT WHERE THE KEY GOES IN - AND THE WHOLE THING HAS A SERIES OF PIN CHAMBERS.
**The Guts of a Lock**

**The Spring**

A combination of a key pin, driver pin, and spring is called a pin stack.

**The Driver Pin (Top Pin)**

**The Key Pin (Bottom Pin)**

**Interesting Fact:**

Modern locks were invented by Linus Yale Jr. in 1861, though the basic design concepts date back to around 2000 BC. Yale’s design has remained largely unchanged since 1861 and is the fundamental principal upon which nearly all pin tumbler locks work today.

**The Bible is the area of chambers above the shear line.**

This is a lock in locked position (at rest). Driver pins block the rotation of the plug.

This is a lock in the unlocked position. Driver pins rest above the shear line.

**A little more complicated, but I think I’m getting it!**
RE-PINNING A LOCK

CAUTION!

Removal of the plug will cause pins and springs to come out rather violently. Don't get ahead!

Locate the circlip at the back of the plug.

Remove the circlip with a set of circlip pliers, or a small flat screw driver.

The circlip holds the plug in place. However, even with the circlip removed the plug will not come out because the pins are still blocking the removal of the plug.

In order to remove the plug, the pin stacks must all be lifted to the shear line. This can be done with the correct key, by picking the lock, or with a thin metal shim.

With the key installed, and the circlip removed, the plug is free to be removed from the shell.

SPROING!

Caution! Removal of the plug will cause pins and springs to come out rather violently. Don't get ahead!
**Using a Shim to Remove the Plug**

**Interesting Fact:**

Shims can be made using automotive feeler gauges. Just find the thickness that fits and cut down to size. Before cutting, you may wish to put the curl in the shim by wrapping it tightly around a pen.

Insert a blank key into the lock, then begin to slide the shim in from the back as the shim contacts the first key pin. Slowly remove the key blank one pin position allowing the key pin to slide down and the shim to enter the space between the key and driver pin.

Repeat the process for each pin position, moving the shim farther into the lock each time.

Once completed, your shim will be fully inserted into the lock and all the driver pins will be stuck above the shear line. You are now able to remove the plug, but don't do that yet! See the next page first!
In order to remove the plug, you will need a plug follower. These can be purchased, or made from wooden dowel. There are a variety of plug diameters, so you will need a variety of plug followers. However, the most common size for locks in North America is 1/2 inch.

The purpose of the plug follower is to replace the plug, trapping the driver pins in the bible of the lock.

The plug follower must be inserted from the back of the lock, and pushed forward to push the plug out the front of the lock.

You’re now free to change the key pins in the plug!

Oh... I just know I’m gonna mess this part up.

Oh probably, the first time.

Clunk!
CHANGING THE DRIVER PINS

TIP: USE A PLASTIC BAG WHEN REMOVING THE PLUG FOLLOWER. THIS WILL CONTAIN THE SPRINGS AND PINS WHEN THEY GO SPROING! (AND THEY WILL!)

ONCE THE FOLLOWER IS REMOVED, COLLECT ALL THE SPRINGS AND PINS AND KEEP THEM SAFE FOR REINSTALLATION.

USING TWEEZERS, CAREFULLY LOAD THE REARMOST CHAMBER WITH ONE SPRING AND ONE DRIVER PIN. YOU WILL NEED TO PRESS THE PIN AND SPRING DOWN INTO THE CHAMBER, THEN SLIDE THE FOLLOWER IN ONE PIN POSITION TO HOLD IT IN PLACE.

REPEAT THIS PROCESS FOR EACH PIN POSITION.

ONCE ALL PIN STACKS ARE INSTALLED, YOU CAN USE THE PLUG TO REPLACE THE PLUG FOLLOWER. IT IS JUST LIKE REMOVING THE PLUG, BUT IN REVERSE!

ZOINK!

YOU MUST REMEMBER TO KEEP THE PLUG ROTATED SLIGHTLY OR THE DRIVER PINS WILL DROP INTO THE WRONG PLUG CHAMBERS. IT GETS BAD AT THAT POINT.

REINSTALL THE CIRCLIP AND YOU ARE COMPLETE!
THE PENCIL TRICK

The pencil trick is great for the beginner. By marking out the positions of each pin, you will have a visual guide to help you know when you are directly under each pin. When the pick is in the lock, line each marking up with the face of the lock and you will know you’re lined up. By knowing just when you’re under each pin, you will be able to better understand the feel of lining up with a pin.

Mark in line with shoulder of key. Line up tip of hook with pin position on key.

Wow! What a good idea!
Lock picking works because of a vulnerability created by mechanical tolerances in the manufacture of locks. Small misalignments in the pin chambers, chambers that are misshapen (oval), as well as misshapen pins will create what is called the binding effect (explained next).

It’s important to understand that no lock can be made "perfect”. Even in a very well-manufactured lock, there will always be mechanical tolerances. In order for the pins to move freely in the chambers, the outside diameter of the pins must be slightly smaller than the inside diameter of the chamber. These tolerances will always be imperfect.

In the next section, we will look at how to exploit these tolerances to pick the lock.
Applying tension is what causes the binding effect to take place.

You can apply tension to the lock with a variety of tools, and either at the top or the bottom of the keyway. There is no "correct" way to apply tension. It is only important that the wrench grips well, and does not slip or bind against other components of the lock, such as the front pin.
**THE BINDING EFFECT**

When rotational tension is applied to the plug, only one pin will prevent the rotation of the plug. This is due to the mechanical tolerances mentioned previously. This one pin is called the "binding pin", because it will get "stuck" at the shear line. This binding pin can now be lifted, using your pick tool, until it crosses the shear line and gets stuck above. When this happens, the binding effect will be transferred to another pin in the lock. If tension is maintained, the set pin will remain above the shear line as you continue to set the next pin. This is the principle upon which lock picking relies.

**DING DING!**

**STEPS TO LOCK PICKING**

1. Apply tension
2. Find the binding pin
3. Lift it to the shear line
4. Repeat steps 2 and 3 until the lock is open

**SOUNDS EASY ENOUGH...**

WELL, JUST HANG TIGHT KILLER, IT’S HARDER THAN IT LOOKS
**POSSIBLE PIN STATES**

**AT REST**
Pin stack is sitting at its lowest point. Picker will notice spring tension on stack.

**SET**
Driver pin is trapped above shear line. Key pin will fall back down and not be under spring tension.

**FALSE SETS**

**OVERSET**
The key pin has been pushed past the shear line and is now binding. Key pin will not fall back down. No spring tension will be detected.

**UNDERSET**
Binding pin has been lifted, but not all the way to the shear line. Key pin is free to fall back down and will not be under spring tension.

It's important to understand that at any time, each pin stack will be in one of the above pin states. To successfully open the lock, you must get all pin stacks into the "set" state. They start off in the "at rest" state. Along the way, you will be challenged by false sets, and recognizing and overcoming these false sets will determine your success.

Cool. This is making sense now!
A BRIEF INTRO TO TOOL MAKING

FOR THIS EXERCISE, YOU’LL NEED A BENCH GRINDER, SAFETY GLASSES, A GLASS OF WATER, AND A HACKSAW BLADE. YOU’LL ALSO WANT SAND PAPER (EMERY PAPER) IN A VARIETY OF GRITS, AND SOME PATIENCE.

IMPORTANT
ALWAYS WEAR EYE PROTECTION AND WORK IN A WELL VENTILATED AREA WHEN SANDING OR GRINDING.

USING YOUR BENCH GRINDER, REMOVE THE TEETH FROM THE HACKSAW BLADE.

IMPORTANT NOTES
THERE ARE A LOT OF MATERIALS THAT ARE GREAT FOR MAKING PICKS, AND A VARIETY OF TOOLS THAT CAN BE USED. WE HAVE DECIDED TO USE A HACKSAW BLADE AND A BENCH GRINDER FOR THIS EXERCISE BECAUSE BOTH ARE WIDELY AVAILABLE AND PRODUCE GOOD RESULTS. SEE THE NEXT PAGE FOR IMPORTANT TIPS ON BENCH GRINDER SAFETY AND TECHNIQUE!

OK, SO FAR SO GOOD.

NEXT COMES THE SCARY PART!

SCARY PART?

NO, NOT REALLY, BUT YOU HAVE TO BE CAREFUL.

GET YOURSELF A PICK TEMPLATE. THESE CAN BE FOUND ONLINE. CHECK AT LOCKPICKING101.COM FOR PICK TEMPLATES. PRINT THE TEMPLATE TO SCALE AND CUT OUT THE SHAPE OF THE PICK, GLUING IT TO THE HACKSAW BLADE WITH A CONVENTIONAL GLUE STICK.
Grind out your picks

Never use the side of the grinding wheel. Always use the front edge!

Grind out the basic shape of the pick. Use the corners of the grind wheel to make the curved shapes. For finer detail, you may wish to use a rotary tool (like a Dremel) with a cutting wheel to get the shape you want.

Be sure to quench often!!! This is important. Quenching will keep the metal cool and strong. Do not let the metal change color while grinding. If this happens your tool will be too weak or brittle.

Please use power tools safely and follow all operating instructions!

Once you've got the basic shape, peel away the template and you're ready for finishing.

Wow! This is starting to look like a pick. Cool!

Yup! But you're only half way home. Pick finishing is the real secret!
Pick finishing is where it’s at. Get good at this! The smoother your picks, the easier they will move through the lock, the better feedback you’ll get from the pins, and the better you’ll be at picking locks!

Start with a heavier grit of sand paper (emery paper), perhaps between 150 and 200 grit, and then work your way to progressively finer and finer grits, finishing with somewhere between 1100 and 2000 grit.

For the rough finishing, wrap the paper around a block of wood and sand all surfaces, paying special attention to the edges of the neck and tip of the pick.

For the tight corners, try wrapping the paper around a chop stick.

Sand the picks until you get a very shiny, very smooth finish.

Beginner’s tip!

When you think you’ve sanded enough, you’re probably only half finished! You want these babies to look like little mirrors! It’s a lot of work, but worth it in the end!

Once you’re happy with the level of sanding, you may wish to really shine them up! Try taking a rotary tool (Dremel) with a hard felt polishing wheel and some polishing compound. You’ll be amazed at the difference!

My hands are numb from all this sanding!

No kidding! Welcome to my world...
Making a Tension Wrench

Wiper blade inserts work great! You can find them inside the rubber on the blade.

Cut 'em down to size and put an L-shaped bend into one end.

I think I can handle that.

File them smooth and put a twist in the handle for comfort and control.

Then polish them up real good with some steel wool.

Viola! You have a wrench that looks just as good as the pro tools! Way to go!

Thanks, I made it myself!
WHERE TO GET MORE INFO

WWW.LOCKSPORT.COM

Locksport International is looking for pioneers to form Locksport groups in your area!

WWW.LOCKPICKING101.COM

Every day, hundreds (possibly thousands) of enthusiasts gather together in the world's leading online Locksport community. Lockpicking101 serves as a huge resource of information on every Locksport topic imaginable. Members regularly answer questions and discuss topics of technique, tools, locks, and more! There is no better place online for the Locksport hobbyist to hang out and learn!
WHY GET INVOLVED IN LI?

BECAUSE IT’S FUN! PICKING LOCKS IS COOL. BUT MANY HAVE DISCOVERED THAT GETTING INVOLVED IN A LOCKSPORT GROUP IS EVEN COOLER. MEMBERS PARTICIPATE IN CONTESTS AND A RANKING SYSTEM. THEY LEARN TOGETHER, CHALLENGE EACH OTHER, AND MOST IMPORTANT, THEY HAVE FUN TOGETHER!
# Locksport International

## MEMBER APPLICATION

### Applicant Info:

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<th>First Name</th>
<th>Middle Initial</th>
<th>Last Name</th>
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PLEASE PRINT CLEARLY

Date of Birth (dd/mm/yyyy): ___ / ___ / ________

### Address:

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<td>Zip/Postal Code:</td>
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PLEASE PRINT CLEARLY

Phone Number:

Email Address:

### Sponsorship:

Applicant must be sponsored by two members of Locksport International in good standing. One of these sponsoring members may be the president of the applicants attending Chapter.

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Chapter President

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### Applicants Under the Age of 18 at the Time of Application Must Accompany This Application With a Signed Letter of Consent From a Parent or Legal Guardian.

I agree that the above information is true and accurate. I understand that membership is granted by the Board of Directors of Locksport International and may be refused or terminated at any time. I understand that upon acceptance, I will be issued a Member ID Card which will remain property of Locksport International and its Board of Directors. I agree to return this Member ID Card upon termination of membership in Locksport International. I agree to abide by the Member Rules of Conduct and conduct myself in a manner consistent with the spirit of the Locksport International Charter. I also understand that this information is being collected for the internal use of Locksport International and will not be distributed without consent. This information will, however, be used to send me information relating to the organization.

### Applicant Signature

<table>
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<th>APPLICANT NAME</th>
<th>APPLICANT SIGNATURE</th>
<th>DATE</th>
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----------OFFICE USE ONLY---------

Member Number:

Date Approved / Denied

CODE:

Mail to PO BOX 971 CAMROSE ALBERTA T4V 4E7 or Fax to 1-780-608-1384