http://en.allexperts.com/q/Locksmithing-3110/2012/1/master-keying-chart-hand.htm Go APR MAR APR
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About this capture

James

Expertise

I do not answer Safe or automotive questions. Period. I am knowledgeable in almost every area of Locksmithing. This includes locks, keys, lost keys, residential and commercial lockouts, rekeying, masterkeying, high security locks, access control, electric locks, security cameras and home safety. I have been running an online business since 2004 where I sell all types of lock and security hardware to everyone from apartment renters to business owners to the US government. Before that I started a locksmith service in 1999. I deal with many types of security equipment including high security safe locks, heavy duty padlocks, exit devices, biometric readers, electric strikes, magnetic locks, full surface hinges and I only sell what I personally stand behind 100%. The online business has given me a more in-depth look at the locksmithing industry, helping me to learn more about each and every product that I offer, as well as products I don't have but end up finding for customers to solve any issues they have with security or door hardware.

Please **don't submit any automotive or safe questions** as these aren't areas that I can help in.

Experience

Locksmithing/Master Keying chart by hand

Expert: James - 1/23/2012

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Question
So, my question is this... Can you point me to some references on how to do by hand what the master keying software does by computer? I would like to be able to generate small master keying charts (I don't need hundreds of pass keys and 6 levels of masters) by hand so that I can understand better the theory of what the software is doing. I have tried searching for this information on the internet but either this knowledge is hard to explain, kept secret, or I do not know the proper search terms. I am not a locksmith but I have a strong interest in the field and would appreciate some pointers to books or other references that will give me the keys to understand how the software does its thing. I have programming experience so I am even willing to read source code for the software if there is some open source stuff available.

Answer
Hello Stephen,

As far as I know there is no open source software for master keying.

Master keying is fairly straight-forward:
1. Know the cuts of your master key;
2. Know the cuts of your change (or user) key;
3. Know how to take that information and properly pin a lock;
4. Create a master key system that has little or now ghost keys.

I'll start with ghost keys. When creating a master key system ghost keys will happen. Ghost keys means keys, if cut a certain way, will work the lock even if you didn't intend for them to. As an example if you have a master key with the cuts of 12345 and a change key of 34567 a key with the cuts of 32345 would also open that lock. This is not a desired key in the system because it compromises the security.

To further explain the ghost key above let's start with a random system.
Let's use a Schlage 5 pin cylinder in our example. Schlage has depths from 0 to 9. MACS or maximum adjacent cut specification of 7 - this means you can't have a #1 cut next to a #9 cut or a #0 cut next to an 8 (I prefer to keep a MACS on Schlage of 6 and only 7 if I have to). It also has a minimum master pin of a #2 and no longer than a #9.

Master Key Bitting: 25630
Change Key Bitting: 48752 (aka user key, tenant key)

You first must determine the bottom pins. To do this take your bittings and write them out like you are adding them together, then draw a line under them:
25630
47852

Then determine the shallowest or smallest pin in each column (chambers), write that under the line:
25630
47852

25630

Those are your bottom pins.

Now calculate your top or master pins and write them under that:

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experience through the many services I have performed for my customers. I've run my business the way I wanted, treating everyone as I would like to be treated and knowing that any customer could be my last if I didn't perform my locksmithing duties as I had promised.

Education/Credentials
I have a diploma in Masterkeying, Advanced Locksmithing & Locksmithing from Foley-Belsaw.

Past/Present Clients
US government, colleges, schools, city and state governments, large and small corporations, home owners.

22222

Now pin the lock, starting with the bottom pins then add the top pins. Your key should now work with both the master and change key.

In addition it should also work with a key cut to 22222, a ghost key.

To prevent ghost keys and other issues, master key a lock to as few chambers as possible. In this example make your master key 25630 and your change key 27850. This means the first and last chamber will always be only a bottom pin, eliminating a larger amount of ghost keys.

To read more about master keying, try Foley-Belsaw. They offer correspondence courses on locksmithing and master keying; you can't take the master keying course without first taking the locksmithing course unless they've changed their rules.

Another source is your local library or book store. There are at least 2 books I've seen that cover master keying as well as a variety of other locksmithing information that you may find use

Questioner's Rating

Rating(1-10)	Knowledgeability = 10	Clarity of Response = 10	Politeness = 10
Comment	my question was answered thoroughly and clearly (easy to understand). It was also answered way faster than I expected. I received the answer to my question the very next day. Wow!		

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