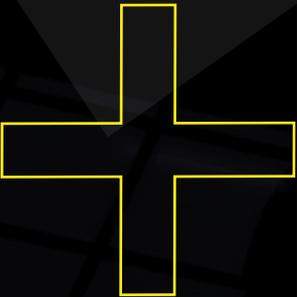




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Best practices WHEN IMPLEMENTING ***A MASTER KEY SYSTEM***

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EVVA
access to security

10 best practices when
implementing a master key system

Introduction



There are many points to consider when selecting your next restricted master key system (system). On the surface, some appear to be quite straight forward, such as patent life or the number of possible keying combinations or even the system hierarchy. However, not all systems out there are created equal and many system capabilities may appear adequate today but will fall short as system expansion is required or when (not if!) someone loses a key.

This article whilst not entirely comprehensive will provide a simple check list of the main items to consider when selecting and implementing your next system. We have also drawn on over 100 years of collective security experience including leading forward-thinking Locksmiths across Australia who have installed some of the most complex systems across a vast array of markets including Government departments, Defence sites, Ports, Remote sites, Utilities, and many more.



Written by
Rebecca Cady
EVVA Technical Sales Manager





Patent life

Most systems are protected by a patent or design registration or both. The patent is important because it protects you against unauthorised copying of your keys. The system you choose should have a long patent and a tightly controlled dealer network. Whilst this will not entirely prevent unauthorised key production, it will go a long way to prevent it. The patent is further supported by a tightly controlled dealer network to ensure componentry is only available through these dealers, thereby further limiting the possibility of the production of unauthorised keys.

We have over 4,000 restricted key systems out there and most people do not often grasp the concept of patent protection. Our experience is that clients rekey their locks about once every 8-10 years. If a system patent life does not exceed at least 8 years from date of installation, then an end user is taking a risk in having an out of patent system without really realising it, thus leaving them without protection against unauthorised key copying.

Kel Phillips from KGB Locksmiths in Brisbane QLD

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“Not all systems are suitable for every environment. In fact, many out there should be reserved for indoor use only.”

Cara Russell from Prestige Lock Service in Port Kennedy WA

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Environment / Application

Many seasoned locksmiths have the same thought process as Cara, that is, almost all systems are suitable for “clean environments” such as white-collar offices. However, if it is a hostile and dirty environment such as a port, beach, roadside application, defence site, or utility, with varying degrees of weather fluctuations throughout the year, then this must be considered when choosing a suitable product. **“Working with many councils and organisations in southern Sydney especially around Brighton-Le-Sands and George’s river, the salt causes many issues with locks – especially corrosion issues with padlocks – and clogging of cylinders making the locks in operable”** says Angelo Koukounaris from St George Locksmiths in Rockdale NSW.

Products that have Teflon (or similar surface lubricants) coated components and do not rely on spring pressure to operate are more suitable for harsher environments (springs within cylinders typically get clogged and dirty with dust and debris – springless or very close to springless systems are ideal for many outdoor environments).

“The need for a robust key system that is reliable in all environments is essential and one would think that this is the case for all key systems on the Australian market, but this is not the case. One particular system we’ve seen over the years was very temperamental and even the smallest amount of dust caused locks to seize up” adds Kel.



Key Control

The sure way to destroy a system is to lose control of who has keys. This statement seems so simplistic, but it has a wider meaning. Lost keys will happen and cannot be avoided, however, if you know about them you can risk manage the issue. The wider issue is the lost keys, that as the system manager you do not know about. A key register should be implemented and maintained to manage who has what key and where these keys fit. This register should be audited from time to time because as I said above it is not the lost key you know about it is the one you do not know about.

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Most master keying specialists are able to provide an end user key management software package that is linked to their master keying software. This can assist those responsible for the management of keys in an organisation to have tight control over who has which keys, as well as being able to show which doors each key holder can access with the keys that have been issued to them. This software also simplifies the audit process if something does go wrong and needs to be investigated.

Jim Fisher from CLASS Locksmiths in Canberra ACT

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Are the Keys Robust?



The keys in any master key system get a major workout. The keys in the system you chose should be strong, not easily bent, wear resistant, produced from high quality materials and of a design that will not damage the pockets or clothing of the key holder. As supported by Kel who says, **"We've done much business removing broken master key system keys from locks over the last 33 years"**. Plus, as mentioned under Environment & Application - the key life is only increased if the system does not rely on spring pressure in the cylinder and has Teflon coat components.



The Locksmith

The Locksmith you choose needs to be experienced with the design, assembly, and installation of a system of a similar size to the one you are installing. This experience will ensure you are provided a system that has a keying matrix that is robust and will allow for your future expansion needs. Of course, ensure that your Locksmith is licenced in relation to the prevailing law of your state and is a member of an appropriate professional body such as the Master Locksmiths Association of Australasia (MLAA) or The Locksmiths Guild.

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Membership of a professional Locksmith association such as the MLAA provides the customer with surety that the MLAA Locksmith operates with a professional guarantee and to an ethical standard set by the association.

Peter Lloyd of Olympic Locksmiths & Security in Gladesville NSW and current President of the MLAA



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There is no doubt that the emergence of 3D printing technology has had a great impact on many industries. For the security industry and more specifically restricted master key systems, 3D printers have changed the key reproduction landscape. "When choosing a system look for a product that is technically difficult to reproduce. It should be extremely difficult to read the cuts on the key even for a seasoned locksmith and if possible, the key should not be a mirror image on each side," adds Angelo

I recall in one meeting with the head of security at a company, I read the cuts by eye (decoded) of the master key he had in front of him just by looking at it – kind of an industry party trick, but a party trick that would completely compromise the security of his master key system if I had illegitimate intentions. Difficult to read means that a key cannot be easily reproduced simply by recording the key cuts and not mirrored image means reproduction using a photo and a 3D printer becomes more difficult.

Difficult to Copy



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Scalability



Scalability and Expansion

The system you chose should have as a minimum 100% expansion capability on what you require today. So, if you currently manage over 1,000 locks, plan for having at least 2,000 locks in the future. This expansion allows for new areas to be added and is also very important to allow for areas to be rekeyed should a key be lost. Whilst a billion combinations for a system at the start may sound a lot, through the master keying process a large percentage of these codes become unusable because of ghosting and possible interchange.

It can be quite tricky at times to add extra door locks on to an old system as there is a chance a new key is able to work a lock it shouldn't – this is known as cross keying. The greater a system capability has in terms of possible combinations and is designed to scale up at a minimum twice its current size, the much lower chance of any cross keying occurring.

Kel Phillips from KGB Locksmiths in Brisbane QLD

Expansion

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Security

It seems a silly thing to say but your system should be of the appropriate security level for your application. The system should be resistant to bumping, picking, and attacks of all manner. The system you choose should be tested to the Australian standards and be compliant to SC8AS4145.2 as well as various international standards. In some cases, depending on the level of security required the system should also be approved by SCEC (Australian Federal Government) or SIS (NZ Government).

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Master Keying Matrix

This is how your system is designed or what keys fit which doors.

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The more complex the design, the harder it can be to expand the system. Streamlining key types to roles in the organisation is valuable advice, but not having the keying structure set up efficiently can also cause challenges for those responsible for the day-to-day management of the system. So, it is a balancing act, and locksmiths who are master keying specialists should be able to deliver a flexible design to meet customers' needs.

Jim Fisher from CLASS Locksmiths in Canberra ACT

The rule of thumb here is to keep it simple. Do not design a key that suits every individual. Where possible, group key holders. The Locksmith will be able to assist but if the design is too complex this may impact on the system life and the ability for expansion or rekeys in the future. This all means that in some circumstances some staff may require 2 keys.

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Ensure the system you purchase is distributed through a tightly regulated dealer network. The dealer network whilst made up of individual competing Locksmith businesses, all have a vested common interest to protect the integrity of the product they sell. That is, whilst the distributor is the regulator, the Locksmith out of self-interest will self-regulate, which in turn prevents unauthorised key production.

Thank you for your reading what are our opinion of the main items to consider when choosing your next master key system. It is by no means 100% comprehensive of every consideration and I guess every Locksmith in the country could add additional insight, but I hope it will provide you a good overview of where to start.

Dealer Network Control

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