

# It's A Lock

Why High-Security Master Key Systems are the Safest Bet





## Introduction

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A well designed high-security master key system is essential to ensure an organisation has the desired level of security without compromising or disturbing the buildings functionality. Master keying systems allow different levels of access whilst reducing the risks involved with issuing a large number of keys. These systems are common within, though not restricted to government buildings, casinos, universities, hospitals, and any other organisation that require the most effective security possible.

A high-security rating requires certain standard design features, options, methods of construction, and production and distribution controls that must be incorporated into the products<sup>1</sup>. These features will make the lock more difficult to penetrate, compromise or open than a conventional lock.

When specifying locks the choice between high security products and conventional security products must be made dependent on the requirements of the facility.

This paper examines seven key elements high security systems provide over conventional locks.



**A design registration protects the design of the product such as shape, configuration, pattern or ornamentation.”**



## Design Registration vs. Patent

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A patent is a right that is granted for any device, substance, method or process that is new, inventive and useful. A patent is legally enforceable and gives the owner exclusive rights to commercially exploit the invention for the life of the patent<sup>2</sup>. A standard patent gives long-term protection, with a standard patent lasting for 20 years<sup>3</sup>.

A design registration protects the design of the product such as shape, configuration, pattern or ornamentation. Design registration is protected for five years, with the option to renew for a further five years<sup>4</sup>.

The difference between specifying a patented lock and a registered lock can have significant implications as a design registration can leave the lock open to imitations or replications, greatly compromising security.

High security products are likely to have a patent covering both the design of the cylinder and the key, and their interaction with each other.

Conventional lock products are only likely to have a design registration, leaving the product exposed to fraudulent duplications.

## Australian Standards Compliance

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Australian Standards 4145.2 Locksets and hardware for doors and windows sets out general design criteria and performance requirements and testing procedures for mechanical locksets and latchsets in residential and commercial buildings, including performance requirements for cylinders supplied separately for installation in locksets<sup>5</sup>.

The testing and requirements for cylinder security set out in the Standards will determine the resistance of a lock to forced or unauthorised entry and efficiency under conditions of light to heavy usage.

Key requirements of the Standards include a cylinders resistance to picking, bumping, drilling, vertical and horizontal impact, pull force, torque, as well as response to the operation of other keys in the same series. Security level of the cylinder can be determined from the performance against each test, with the levels ranging from one to ten, ten providing the highest level of security.

## Master Keying Capabilities

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A Master Key System comprises of a hierarchy of keys and a number of cylinders or locks that allow different groups of individual key holders to gain access to all or specifically designated areas of a building or buildings<sup>6</sup>.

A well planned multi-level master key system without compromising security or safety.

There are four possible levels to a master key system

- Great Grand Master
- Grand Master
- Master
- Sub-Master

With millions of combinations available for the end user, a high security master key system offers endless limitations compared with a conventional system which only offers combinations in the thousands.

## Drill Protection

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Without drill protection the cylinder pins and side-bar of a lock could be drilled in a matter of minutes<sup>7</sup>. Drill-resistant inserts are required in the plug and cylinder to ensure resistance to drills.

The definition of a successful anti-drill barrier according to the Australian Standards AS4145.2 is 'to withstand 10 minutes against the use of a maximum of three HSS (High Speed Steel) drills'.

High security locks provide drill protection as standard, whereas conventional locks will rarely offer the feature leaving them open to security failure.



## Picking and bump resistance

The 'art' of lock picking and lock bumping can create a very real threat to the security and safety of a facility.

Of particular concern, and a method of picking that has been garnering a lot of attention in recent years is lock bumping. Lock bumping uses a specially crafted key that is gently "bumped" into the lock, forcing the pins in the lock to the shear line as the key turns and opens the door. While bumping has long been known and practised amongst locksmiths, only recently has it become well known among

the general public and criminals, with bump keys now available for order online<sup>8</sup> or even for manufacture at home<sup>9</sup> they are now more accessible than ever.

Conventional systems using pin tumbler locks are highly vulnerable to lock bumping, with research suggesting up to 90 per cent<sup>10</sup> of these locks are easily opened using the method. High security products are likely to offer design features within the cylinder to ensure resistance to these techniques.



**SCEC rated lock systems guarantee the highest level of security."**

## SCEC Rating of Locks

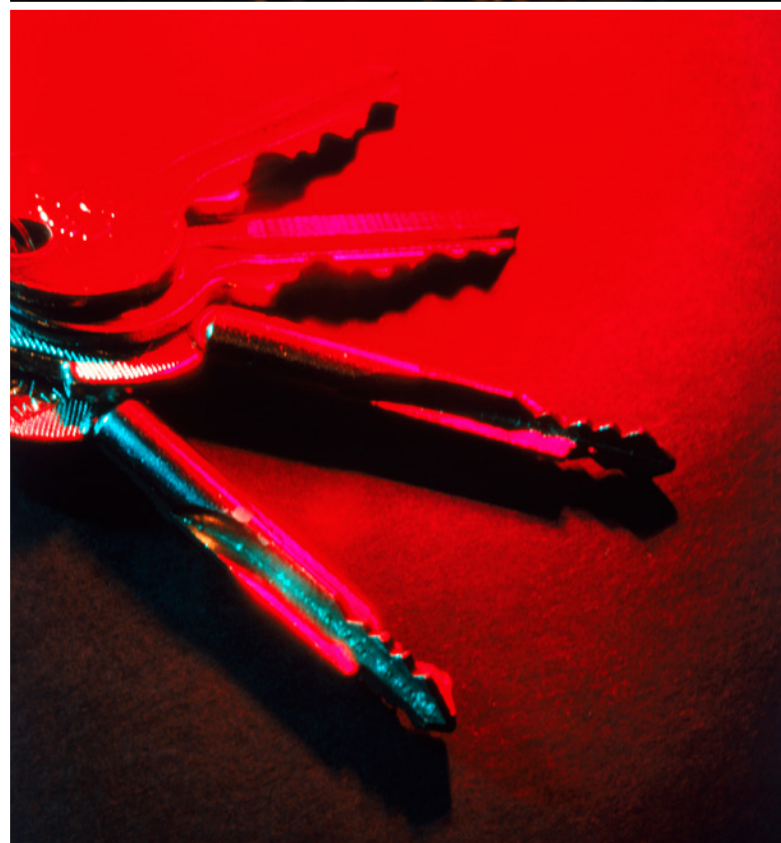
The Security Construction and Equipment Committee (SCEC) is a standing interdepartmental committee responsible for the evaluation of security equipment for use by Australian Government departments and agencies<sup>11</sup>. Locks tested to meet the criteria of SCEC are the primary source of products used by Australian Government agencies, owners of Critical Infrastructure, and security advisers to protect their resources<sup>12</sup>.

SCEC rated lock systems guarantee the highest level of security. Conventional locks systems will not be SCEC rated.

## Authorised Contractual Agreements for Locksmiths

These Agreements are most likely applied to authorised high security locksmiths. They are used to ensure that the authorised locksmiths are complying with the requirements of the manufacturer of the high security locks/products. If a locksmith fails to adhere to the agreement, the locksmith may be in breach of the contract and therefore may lose the right to use and sell the locks/product.

Conventional security products are unlikely to need contractual agreements with a locksmith.



## BiLock Exclusive from Australian Lock Company

BiLock is an internationally acclaimed high security locking system in use by government, university and hospital facilities. BiLock Exclusive is a master key system for when only the highest levels of security will do.

BiLock Exclusive is Australian owned, designed and manufactured, and with a long patent life it is guaranteed against imitation or replication until 2034.

The addition of a high tensile steel anti-drill barrier as standard protects against drilling, picking and bumping, making it compliant to AS 4145.2.

BiLock Exclusive can be used in new installation as well as retrofits, with the ability to convert any lock resulting in better access control and fewer keys required.

### BiLock Colour Coding

BiLock Exclusive key heads are specifically designed to incorporate extensive colour coded master keying capabilities to ensure optimal security with quick and simple key identification. The colour-key coding allows organisations to create a Master Keying Hierarchy with instant identification of keys by system managers and building supervisors with visibly defined levels within the master key system.

One, two or three colours can be mixed and matched from the 22 colours in any key head, with the possibility of over 8000 combinations.



Colour-key coding allows organisations to create a Master Keying Hierarchy with instant identification of keys.”

### Australian Lock Company

For over 30 years Australian Lock Company has been industry leaders in the design and manufacture of high security lock systems for Australian and overseas markets.

BiLock Exclusive represents Australian Lock Company's commitment to ongoing innovation in providing the highest security lock solutions for the end user.

To find out more visit

<http://www.australianlock.com.au/home/bi-lock/>





## REFERENCES

- <sup>1</sup> Locks, Safes, and Security: An International Police Reference pg. 172, Marc Weber Tobias, Jan 2000
- <sup>2</sup> <http://www.ipaustralia.gov.au/get-the-right-ip/patents/>
- <sup>3</sup> <http://www.ipaustralia.gov.au/get-the-right-ip/patents/types-of-patents/standard-patent/>
- <sup>4</sup> <http://www.ipaustralia.gov.au/get-the-right-ip/designs/about-designs/benefits-of-registration/>
- <sup>5</sup> <http://infostore.saiglobal.com/store/details.aspx?ProductID=996664>
- <sup>6</sup> <http://www.masterlocksmiths.com.au/mlaa-rekey-or-master-key.php>
- <sup>7</sup> High Security Mechanical Locks: An Encyclopedic Reference, Graham Pulford, 2007
- <sup>8</sup> <http://homesecurity.about.com/od/threats/a/The-Truth-About-Lock-Bumping.htm>
- <sup>9</sup> <http://www.dailymail.co.uk/sciencetech/article-2739879/WATCH-The-3D-printed-bump-keys-open-ANY-lock-seconds.html>
- <sup>10</sup> <http://www.247locksmiths.us/tips/lockbumping.html>
- <sup>11</sup> <https://scec.gov.au/>
- <sup>12</sup> [https://scec.gov.au/news/putting\\_my\\_product\\_in\\_the\\_catalogue/benefits\\_of\\_seep](https://scec.gov.au/news/putting_my_product_in_the_catalogue/benefits_of_seep)

