

▶▶▶ Locking System | MCS Magnetic Code System





COMFORT | ORGANISATION | SECURITY

EVVA's Innovative Strength

EVVA has access to a multitude of patented systems today. This enables locking systems for certain security, organisation and comfort levels to be selected in accordance with economic aspects. With a great deal of investment in research, EVVA is continually developing new key technologies that set themselves apart from the familiar functional principles that have been on the market to date. This is the only way to keep on top of the ever increasing security and organisation demands.

The EVVA Trinity Principle

The EVVA advisory concept is based upon the EVVA trinity principle, which takes into account the conflicting areas of organisation, comfort and security within a building. Only by incorporating these three aspects early in the planning phase, it is possible to implement an individually and economically optimized solution for the respective building, user and administration.

MCS – A Unique System

The Magnetic Code System (MCS) utilises the elementary power of magnetism. MCS was developed by EVVA – in close collaboration with technical universities – to meet the highest security demands and complex entry hierarchies. EVVA is the only manufacturer worldwide to provide a high security, magnetic locking system of this kind! The key's multi-patented codification ensures the utmost security against key copying and, on account of its variation diversity, guarantees complex entry hierarchies. One magnetic codification and two mechanical codifications guarantee triple security. The permanent magnetisation has a lasting hold.



EVVA mechanical systems from left to right: MCS, 3KS, DUAL, DPI

Reduced To A Simple Formula: MCS = Security³

MCS Technology – Permanently Magnetic For Utmost Security

Key security

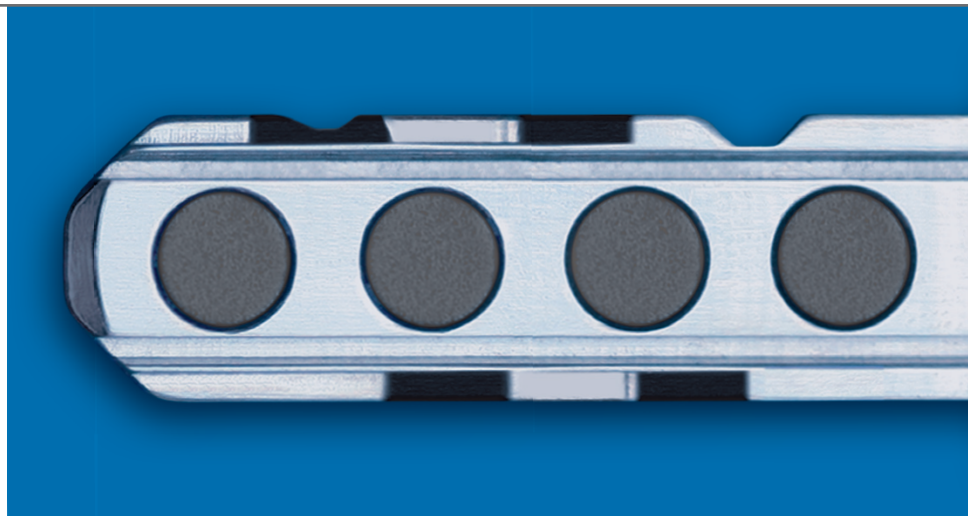
- Permanent magnets

By means of 4 double-sided magnetic tabs, which are independently magnetisable, the key is scanned 8.times. It is not possible to demagnetise these permanent magnets by using conventional methods. In addition to the magnetic codification level, the two mechanical codifications ensure :

- longitudinal profile and
- locking elements for the incomparable MCS security

Operational reliability

Situated in the cylinder, to the left and right of the key chamber, are 8 contactless and freely revolving magnetic rotors, which are assigned to the key's 4 magnetic tabs. The magnetic rotors are brought into locking position by matching the codification with the key; the opening/closing release takes place via the overlying mechanics. The special feature of MCS: each magnetic field interacts with the other fields, which guarantees utmost security! Furthermore, grooves are milled on both sides of the key - thus bringing the bolts into the locking position without using a spring force. Upon two complete turns of the key, the codification is checked twice – independently from each other.



Abrasion resistance

By means of the magnetic fields, the magnetic rotors are brought into the locking position without contact and thereby without friction. This technology ensures the utmost abrasion resistance! Also unique is the overload protection: upon the insertion of unauthorised keys, the applied strength does not push against the bolt elements, but rather is diverted into the body thanks to the overload protection.

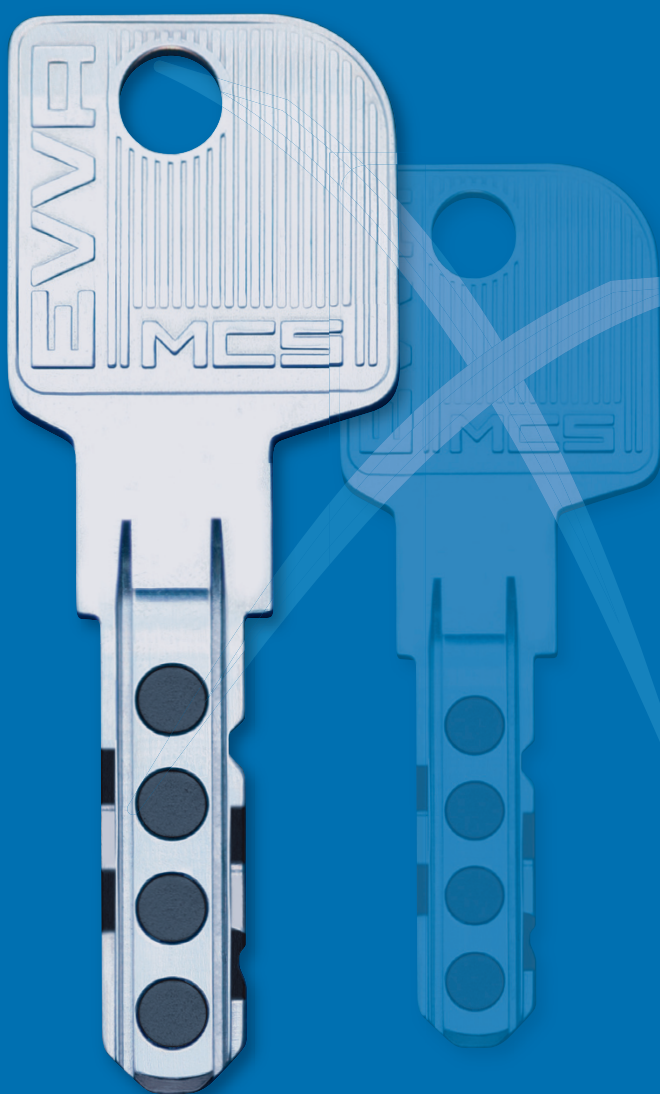
The permanent magnets are not susceptible to conventional magnetic fields and guarantee an extremely long lifespan. Even if the key is subjected to extreme conditions: the magnetisation holds forever.

No two are the same!

The eight rotors have access to different positions on the magnetic tabs via several recesses – and each one has a different alignment. Thus, there are an infinite number of differently encoded MCS keys.



We Are Not The Ones To Copy!



*The highest key copying protection through
the application of magnetism: MCS*

Key Copying Protection

For the protection against key duplication, illegal copies, ("black keys") and key manipulation, the system has four different safeguards at its disposal, which always complement each other in their effectiveness.

Organisational protection

Keys are only manufactured for authorised individuals with the appropriate proof of legitimacy (e.g. security card).

Legal protection

The commercial manufacturing of the multi-patented MCS key takes place exclusively at EVVA. This enables EVVA to take legal steps against the unauthorised manufacturing of a duplicate key.

Technical protection

MCS possesses technical features, such as the permanent magnetisation, which require special machines for its manufacture. Illegal manufacturing is thus practically impossible and, on account of the high financial expenditure involved, not economically viable.

Technological protection

Thanks to the combination of two technologies (magnetic & mechanical), it has not been possible to copy the MCS to date!

Security First – As A Matter Of Course.

Cylinder Lock Security

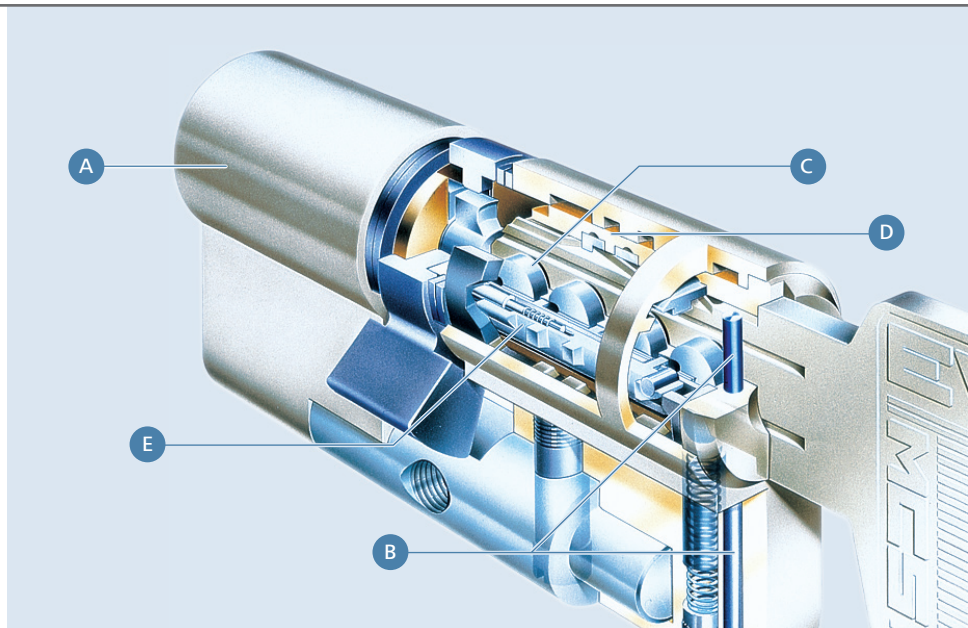
It is a continual race against time in order to ensure that the new functional principles do not give illegal opening methods a chance. That is why only innovative technologies provide a lasting protection against known methods of forced entry. All employed technologies have the goal of impeding a break-in.

EVVA develops and integrates protective mechanisms against the following opening methods:

- ▶ Detectable opening techniques (the cylinder lock remains fully functional, there are visible traces of tampering): opening with vibrating tools.
- ▶ Non-detectable opening techniques: opening with lock tools (e.g. Dietrich), bump key opening etc
- ▶ Destructive opening techniques (the lock cylinder is destroyed): breaking or ripping the cylinder off, drilling into the cylinder, sawing the cylinder off, extracting the plug of the cylinder.

Scanning security

The contactless magnetic rotors are covered up by the key chamber wall and can therefore not be picked mechanically. It is not possible to scan the magnetic codification in the cylinder.



Drilling security

Hard metal elements in the cylinder protect it from destructive opening techniques, such as drilling for example.

Plug extraction security

Hard metal elements in the body and plug guarantee protection against the extraction and ripping out: it is not possible to attach plug extraction tools. In this way, the extraction of the plug from the cylinder body is prevented. A security fitting combined with the cylinder lock provides the best possible protection!

- A** Body
- B** Hard metal elements
- C** Magnetic rotors
- D** Locking element
- E** Locking element with overload protection

A



Combi-Key: the advantages of mechanics and electronics combined in one medium

Combination with electronic identification technologies

The MCS key can also be designed as a Combi-Key. This can be employed as a carrier for contactless identification technologies (Mifare, Legic) or for those requiring contact (iButton). The mechanical key is thereby transformed into an electronic identification medium and additionally replaces identification media such as cards, for example. Not only the administration of identification media and keys is made significantly easier and safer – it is also a great deal more comfortable for the individual key/identification media user to just carry one medium. The mechanical key can only be separated from the identification medium by destroying it. (Illustration A)

Mechanics & Electronics

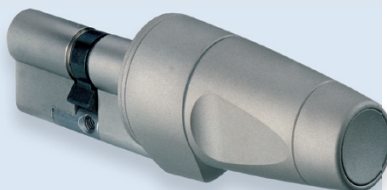
Mechanical locking systems form the fundamental organisational building security. Comprehensive, individual security solutions arise from the combination with electronically controlled security technology.

Combination with motor cylinder

Without making changes on the mortise lock, the electronic motor cylinder can lock and unlock the door using an electric driven motor knob. In an emergency, the cylinder can be mechanically operated from outside.

(Illustration B)

B



C



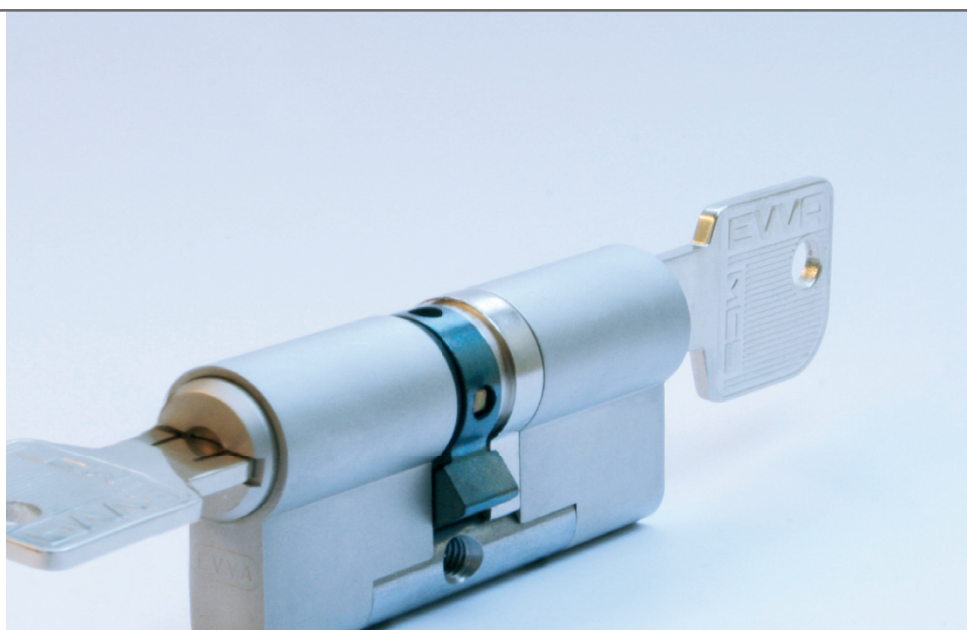
We Fit Together Perfectly.

Locking systems tailor made to meet your requirements

In practice, for reasons of economics as well as security, mechanical locking systems are often installed in combination with electronic locking systems. This allows the building entrance to be electronically surveyed, whilst the interior doors are organised and secured via a mechanical locking system.

Mechanical emergency locking for electronic locking systems and entry control systems

Nothing can replace the robustness and stability of mechanical locking systems. For this reason, mechanical cylinder locks are often employed in case of an emergency on electronic locking systems and entry control systems (e.g. in the event of a power cut or battery failure). This is recommended as a basic principle and is often compulsory for emergency service organisations e.g. fire stations. (Illustration C)



Cylinder Lock- Options

Different options are necessary within a locking system e.g. for building entry doors, escape and emergency doors, office and interior doors, cellar doors, garage doors, lift gates, window handles, mailboxes, balcony doors, safety deposit boxes or furniture locks. The established DPS-system can be installed worldwide and is able to content almost every security requirement.



Option BSZ:
Cylinder can be operated even when a key is inserted on the opposite side

MCS special functions

External Key Override (BSZ)	•
External Key Override Emergency and Danger Function (GEFE)	•
Knob and Anti-Blocking Function (SOSE)	•
Dust Cover (SSW)	•
Protection against Sea Water (SEW)	•
Cog Wheel (ZR)	•



Reference Projects:

Vienna Airport | State Mints Berlin |
Austrian Parliament, Vienna | SIG, Geneva
| House of Representatives, Berlin | Austrian
National Bank, Vienna | Swarovski, Wattens/
Tyrol | Leopold Museum, Vienna | T-Mobile,
Vienna | MDR Mitteldeutscher Rundfunk, Leip-
zig | Banca di Roma, Rome | State Art Collection,
Dresden | Wiener Linien, Vienna | Austrian
Embassy, Berlin | General Hospital, Vienna |
Museum of Natural History, Vienna | Siemens
Austria, Vienna | Provincial Hospital Graz | Pro-
vincial Hospital Klagenfurt | Baxter AG, Vienna
| Vienna International Center, Vienna | Bank
Austria, Vienna | STEWAG Steirische Elektrizitäts-
werke AG, Graz | Linz AG | Telekom Austria
AG, Vienna | Austrian National Library, Vienna
| Vienna Mozart House, Vienna | BAWAG AG,
Vienna | The City of Geneva | Rudolf Founda-
tion Hospital, Vienna | VAMED, Vienna | RZB
Raiffeisen Central Bank, Vienna | Accident
Hospital Meidling, Vienna | Provincial Hospital
Villach | Lorenz-Böhler Hospital, Vienna