Five key experiences on the topic of locking solutions

Why the CLIQ® technology is the right decision for your company

CLIQ®

IKON
ASSA ABLOY

Experience a safer and more open world

Our invention and expertise – IKON is the original and has been shaping developments in lock and security technology for over 90 years!

Since inventing and patenting the profile cylinder over 90 years ago, IKON locking cylinders have been setting standards in many countries throughout the world. When the patent was granted, it gave rise to the age of what is known as the security cylinder. This is a legacy which we are committed to and which we are proud of.

The profile locking cylinder is almost always used wherever doors are locked and need to be secured against unauthorised entry. Today, this cylinder represents the key component in lock and door security systems. We are still supplying keys and lock cylinders today for locking systems which were installed as far back as 90 years ago.

The right decision: Five key experiences for comprehensive security in all buildings

Every building has different security requirements. Impressive products alone aren't enough. For us, there are five key experiences that you go through when making a decision:

Key experience 1:
Investment
Experience the high level of investment security from the world market leader that will last for the coming years and even decades. Our reliability ensures that their investment also pays off in the long-term!

Key experience 2:
Security
Experience the system with the future installed: The CLIQ® technology combines IT security, physical security and data protection and impresses in all three areas.
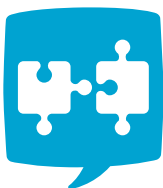
Key experience 3:
Convenience
Experience the convenience: Organise your processes flexibly to suit your changing requirements - quickly and smoothly!

Key experience 4:
Expertise
Experience the expertise that we are expanding every day as the inventor of the profile cylinder. Rely on security developed by the world market leader!

Key experience 5:
Technology
Experience our established solutions that shine all over the world with a wealth of pioneering innovations and cover all international requirements with our variety. This means that everything is optimally secured, any time and everywhere!

How do you become a market leader?
By combining all local market leaders under one roof!

ASSA ABLOY stands for long-term, reliable partnerships.

ASSA ABLOY is the leading manufacturer and supplier of lock solutions and security systems worldwide. The secret of our global expertise is easy:

ASSA ABLOY combines the local market leaders under one roof and offers them an international platform for even more success.

ASSA ABLOY

effeff
ASSA ABLOY

IKON
ASSA ABLOY

Leading brand names

In Germany, these are the strong effeff and IKON brands that are part of ASSA ABLOY Sicherheitstechnik GmbH. With these two brands ASSA ABLOY combines the two pioneering developments in the worldwide security history under one roof: the invention of the electric strike and the profile cylinder.

Technology leadership

We are a technology leader and are among the top 100 most innovative companies in the world. We have once again made it on to the Forbes list. We invest in innovations so that we can continue to deliver the right answers and offer impressive solutions in the future.

Long-term partnerships

With ASSA ABLOY, you not only secure buildings, but can also rely on a secure and long-term partnership. IKON still offers replacement keys for older master key systems to this day. This goes all the way back to 1926 – you don't get more sustainable than that!

Outstanding products

Our products impress and have received multiple awards:

Why your investment pays off:
These facts speak in favour of CLIQ®

New electronic solutions save time and therefore costs

New locking systems result in transparent management with automated processes and make work visibly easier. Ultimately, your company benefits from concrete savings in time and workforce – and these are reflected in figures. An electronic master key system results in lower costs with changing access authorisations and if a key is lost, because all these situations can be resolved quickly, flexibly and cost-effectively. There's no way around this with mechanical systems, however, as large number of locking cylinders and keys take a large amount of time and significant cost to replace.

Lower follow-up costs in the event of expansion, no maintenance costs

An average master key system is used for several decades. With many conventional master key systems, there are significant cost implications for expanding the system, for maintaining the cylinders or even for replacing a system. At ASSA ABLOY, you benefit from maintenance-free cylinders, low follow-up costs in the event of expansion or conversion and a long-term partnership.
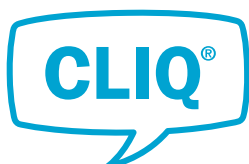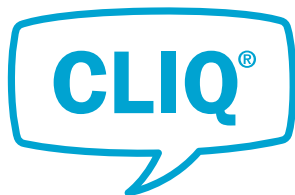
CLIQ®

The initial costs of a new locking system quickly result in financial added value, e.g. during maintenance and when a key is lost.

Mechanical versus electronic:
Time and cost implications for frequent events

	Mechanical system	Electronic CLIQ® system
Costs maintenance	· Annual maintenance costs for all cylinders	· Maintenance-free up to 200,000 locking cycles (e.g. with eCLIQ), i.e. no costs
Costs if a key is lost	· Costs for all cylinders that were operated with the lost key · Costs for all keys to match the new cylinders	· No cylinder replacement required, i.e. costs only incurred for a single new programmable key
Time required if a key is lost	· Delivery time for the new products · Mounting the new cylinder	· Blocking the old key and programming a new key with just a few clicks

An investment that impresses in numerous ways:
Figures and references

CLIQ® is successfully in use:

- **in over 10,000 master key systems**

- **with 3,000,000 keys and 2,000,000 cylinders**

- **maintenance-free up to 200,000 cycles (eCLIQ)**

- **as currently the largest electronic CLIQ® system with more than 200,000 cylinders and 30,000 keys**

Industrial enterprises	such as Deutsche See in Bremerhaven
Utility companies	such as Stadtwerke Kiel
Energy companies	such as MITNETZ STROM in Sachsen-Anhalt
Logistics facilities	such as the REWE logistics centre in Oranienburg
Transport companies	such as Wiener Linien in Austria
Telecommunications facilities	such as at Deutschen Telekom AG
Schools	such as the school for children with learning difficulties of the Diakonischen Stiftung Wittekindshof in Bad Oeynhausen
Universities	such as the RWTH Aachen University in Aachen
Administrative building	such as the Speicherstadt in Hamburg
Libraries	such as the city library in Stuttgart
Public institutions	such as the fire brigade in Mistelbach, Austria
Hospitals	such as the university hospital in Frankfurt am Main
Leisure facilities	such as the Deutsches Theater in Berlin
Function building	such as the ratiopharm arena in Neu-Ulm
Museums	such as the Museum of Applied Arts in Vienna
Shopping centres and trading companies	such as branches of AMPELMANN GmbH in Berlin

Triple security:
## Physical security, IT security and data protection

These comprehensive security principles of the system are only followed by ASSA ABLOY: All requirements from the three areas IT security, data protection and physical security are taken into account – during development, as well as during installation and commissioning.

CLIQ®

The different aspects of security technology:

eCLIQ operates in the three aspects of physical security, IT security and data protection and impresses in all three areas.

PHYSICAL SECURITY

DATA PROTECTION
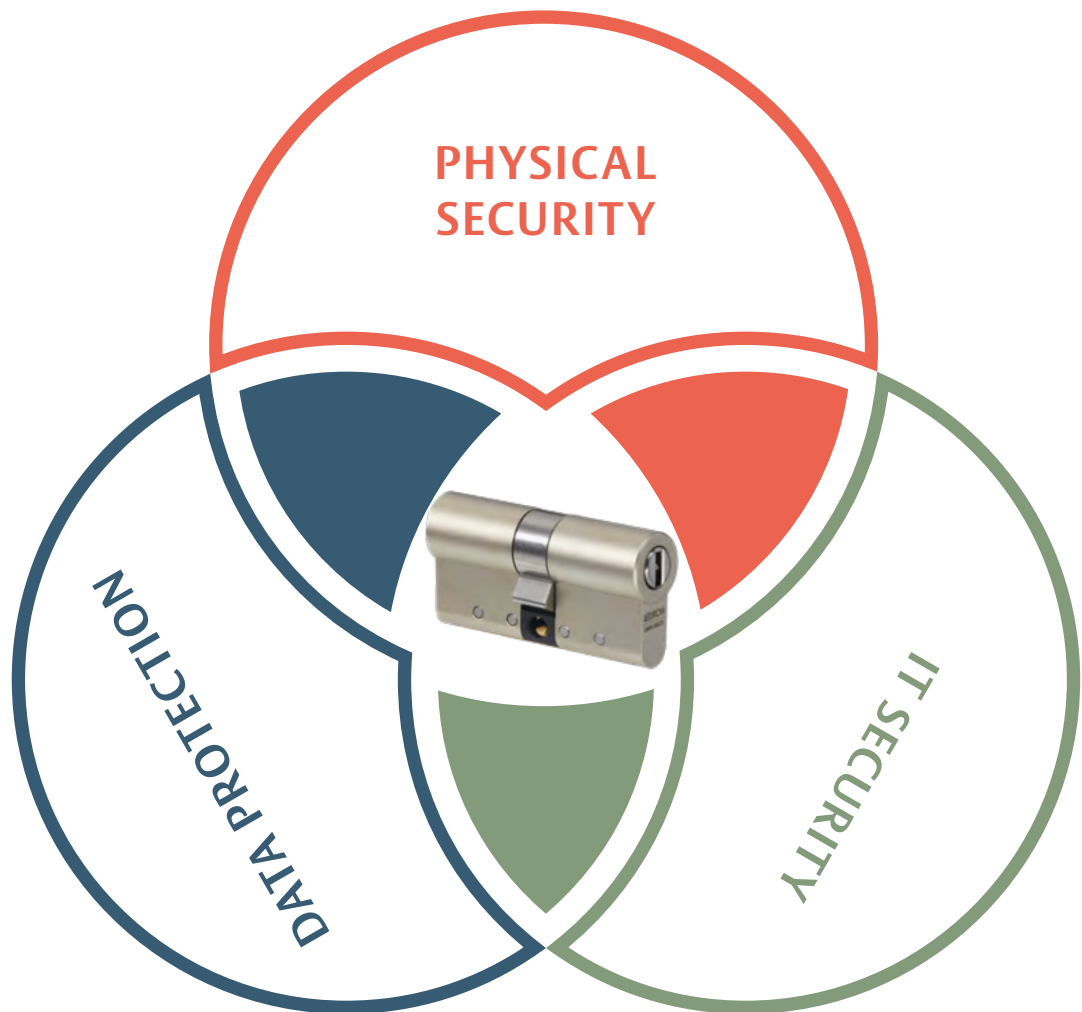
IT SECURITY

IT security:
Over the lifecycle of a system, the software technology will be overhauled several times. What is state of the art today may already be susceptible tomorrow. This is why it's important to consider the sustainability of the relevant measures with IT security. To ensure this, the development department at ASSA ABLOY is already working on an ISO 27001-compliant process.

Physical security:
eCLIQ achieves the maximum classification from the outset with DIN EN 15684. But we are not satisfied with this. Beyond the scope of the established standards, we use the know-how of our global Research & Security Center to test our products extensively in line with the current state of the art and to improve them constantly.

Data protection:
Data protection affects us all. We already support the legal and operational requirements placed on operators of a management system on the system side – whether with two-factor authentication, legally compliant deleting functions, a suitable role and rights concept and a work's council function, for example.

Physical security:

CLIQ® technology makes you flexible and your locking solution secure

CLIQ®

VdS

PIVCERT

Ex

Numerous certificates reflect the high security standard of CLIQ®.

Security by Design from the ASSA ABLOY Research & Security Center (relevant useful information can be found in the interview from page 13).

Simple and quick installation of cylinders without wiring

New, future-oriented CLIQ® chip generation with AES encryption and fast processing speed with efficient energy management

The electronic contact between keys and locking cylinders serves to transmit both power and data securely

Locking bar

Rotor

Spring with earth contact

Motor

Keys and cylinders can be programmed with flexible locking authorisations and schedules

Waterproof and dust-proof key head with battery and electronic board

Rapid replacement of the standard battery in the key – without the use of tools

The CLIQ® system range offers the right solution for everyone:

· +CLIQ is the solution for easy expansion of mechanical master key systems

· eCLIQ is the purely electronic system in compact design – the maximum level of convenience and flexibility in the field of access control.

IT security and data protection:
With us, security begins as early as the development stage
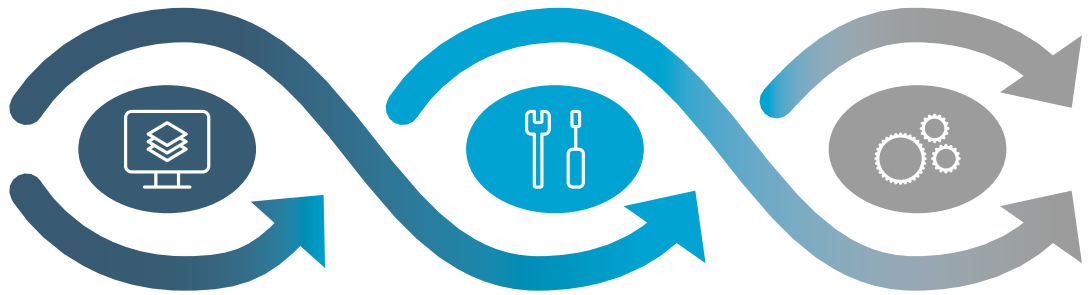
Development

The comprehensive security approach of ASSA ABLOY covers the development, installation and operation of the CLIQ® system.

· Security by design: IT security is a fixed part of the development process

· Secure development standard in accordance with ISO 27001

· Sustainable development process with established test and release process

· External penetration tests by independent, rolling institutes

· Established weak point management to detect and remove gaps in security in the early stages

Planning

· Certified, qualified partner network

· Legal and internal specifications, whether operated as a SaaS solution, encapsulated or hybrid

· Comprehensive documentation and trainings for installation

· Support of current operating and development environments

Operation

· 24/7 software support with specialist contact partners

· Regular provision of updates, upgrades and patches

· Training for users

· Individual Service Level Agreements for updates, maintenance and support

IT security

Information and data are worthy of protection. IT security involves protecting ITC systems in companies from threats. The protection goals are confidentiality, availability, authenticity and integrity.

Data security has the technical goal of adequately protecting data against loss, tampering and other threats. Data security is therefore a requirement for effective data protection and enables GDPR-compliant operation.

· **Confidentiality** is the property of a message that should only be seen by a restricted group of recipients. The contents should not be passed on or published.

· The **availability** of a technical system is the level to which the system fulfils specific requirements within an agreed period of time. It is a quality criteria and a key performance indicator of a system.

· **Authenticity** means that the content is real, can be verified and can be trusted. Checking a property that is claimed to be true is known as authentication. Via digital signatures, data can be assigned to the specified sender. This verifies the authentication of the data origin.

· **Integrity** means that it must not be possible for data to be changed unnoticed. Changes to data must be traceable, while the focus with confidentiality is on the authorisation.

If everything works and fits everywhere with ease:
Then you have discovered the CLIQ® convenience!
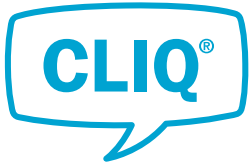
Are you already familiar with our CLIQ master key system group on LinkedIn?:

Here, you can find further interesting information relating to all aspects of CLIQ®.

Usability:
CLIQ® is simple.
The extremely user-friendly design, the workflow-based processes and the clearly structured interfaces make the system so easy to use. The integration in other processes and the modern web-service interface make integration in your company easier.

Variety:
CLIQ® is suitable for everything.
CLIQ® covers all cylinder designs and is therefore suitable for practically all applications, from the letterbox to industrial doors.

Standardisation:
CLIQ® is suitable for everywhere
In Hong Kong and in Schwäbisch Hall, in any application, indoors and outdoors, for critical infrastructures and for office buildings.

Fitting:
CLIQ® is wireless
Cylinders can be installed quickly and easily – without cables. The power supply is provided by the battery in the key.

High-performance:
CLIQ® is maintenance-free
We only use high-quality and durable materials for CLIQ®. This means that we achieve extremely long lifecycles, maintenance-free.

Automation:
CLIQ® works right away
Even major structural changes can be carried out in just a few clicks, new keys can be used right away: Plug and play!

Accessibility:
CLIQ® is inclusive
The CLIQ® software is accessible for a wide range of users: for people with limited mobility, reduced vision and the hearing impaired. This is achieved through scalability, changing contrast, shortcuts and much more.

Roles & rights:
CLIQ® offers a role and rights model.
With the role & rights model, you can organise all employee processes quickly and easily. Instead of assigning lots of users the same rights, a user role is defined that includes the rights to be assigned. This means that access rights to buildings can be managed efficiently. For example, users from the caretaker user group can open any door and users from the IT group can only open doors in the IT block

Multi-client capability:
Software use by multiple clients
If a software has multi-client capability, it can manage multiple clients on the same server or software system at the same time. This means that every user accesses the same software, but can use their own interface and save individual data. Each client configures the software with the settings they personally need. The characteristic feature here is that all clients access on the same basis, but noone can view the data of the other user.

Partner structure:
CLIQ® is in good hands.
Our certified CLIQ® competence partners are constantly expanding their qualifications and can therefore offer you the best possible advice.

Service:
CLIQ® is full of know-how
Benefit from our know-how as an experienced manufacturer and our relevant services that we tailor individually to your requirements.

Worldwide:
CLIQ® works everywhere
CLIQ® technology is used successfully all over the world and masters unique country-specific features and requirements easily.

Interview behind the scenes:
The ASSA ABLOY Research & Security Center

The ASSA ABLOY Research & Security Center (R&S) is a company-wide department and was founded over 8 years ago in Berlin. The department tests the security of mechanical and electromechanical products: The products are tested for optimisation potential and security gaps with regard to forced opening and tampering attacks. Results from tests are incorporated directly into product optimisation.

Dr. Torsten Quast has been working as a Cylinder Specialist at R&S for seven years. The laser physicist began 'cracking' combination locks in his early youth and has been active as an expert in the lockpickers association in Berlin for many years with immense virtuosity and patience.

Dr. Torsten Quast,
Head of Research &
Security Center

What does the Research & Security Center stand for?

Dr. Torsten Quast:
We have a clear mission: We want better products. Our internal slogan is "Beyond the Standards", which means that we make our products significantly better and more secure than the tests require.

What is the focus of your work?

Dr. Torsten Quast:
We test products for weak points that could be exploited by potential burglars. In addition to the weak points and security risks, we also focus on the user experience. How the key is inserted in a cylinder, for example, or how the installation takes place, and whether there is improvement potential.

Are the common standards in the sector not enough?

Dr. Torsten Quast:
The standards define minimum values that must be achieved by products with the relevant certification. As R&S, we go beyond these. We combine methods of attack and use other "unconventional" tools. To overcome the methods, we look for creative approaches and think "outside the box". This means that we are also quicker than the standards; because it often takes a while for new break-in methods to be included in the standards.

What impacts do your test results have on the development?

Dr. Torsten Quast:
We work alongside the development process, an approach that you could call "Security by Design". This means that we carry out intensive tests on ASSA ABLOY products during development. *We are therefore proactively involved in the development cycle and can ensure that better products are created as early as this stage*.

What about focussing on the future: What results flow into the innovation process?

Dr. Torsten Quast:
We make the invisible innovations. Security takes place in the cylinder and is therefore invisible to our customers, but also extremely valuable. What we achieve today as the level in a product will be the basis for a higher level in the next product generation tomorrow.

What characterises the employees at R&S?

Dr. Torsten Quast:
An exact understanding of the product, a wealth of experience in break-in methods and technologies and the right intuition are important prerequisites for our work. *All employees also have a highly developed instinct, patience that borders on obtrusiveness and the "sportsmanlike" ambition to identify weak points* – what these are will remain our secret.

How does the contact between R&S and customers and sales work?

Dr. Torsten Quast:
We call it VoC: Voice of the Customer. Sometimes we call it "Voice of the Cylinder", *because we are the "Cylinder Whisperer", we are very good at uncovering the secrets of the products*. We ultimately combine the opinions of our customers and our own internal expert opinions, which results in the synergy effects that make our products unique.

Interview behind the scenes:
The ASSA ABLOY Research & Security Center

What do you believe sets your department apart?

Dr. Torsten Quast:
R&S works on a group level, i.e. global. As far as I know, we are unique in our sector. That's what makes it so special, that's what makes ASSA ABLOY. At our company, all of our know-how is bundled thanks to our joint work. This leads to a much deeper understanding of security, which ultimately makes completely different development services possible and results in extremely well-developed products.

What characterises eCLIQ?

Dr. Torsten Quast:
eCLIQ was accompanied by R&S from the very beginning, resulting in a high-end security product, which can be used right through to critical infrastructures. eCLIQ has thus achieved an extremely high level of security, convenience and flexibility in the field of electromechanical cylinders.

"Brute force" opening test:
Brute force opening refers to drilling, breaking open or milling, for example. These opening methods are tested in a standardised way and are also relevant for insurance companies. The focus here is on the concrete destruction of the mechanics. Brute force openings are the most frequent methods used by intruders.
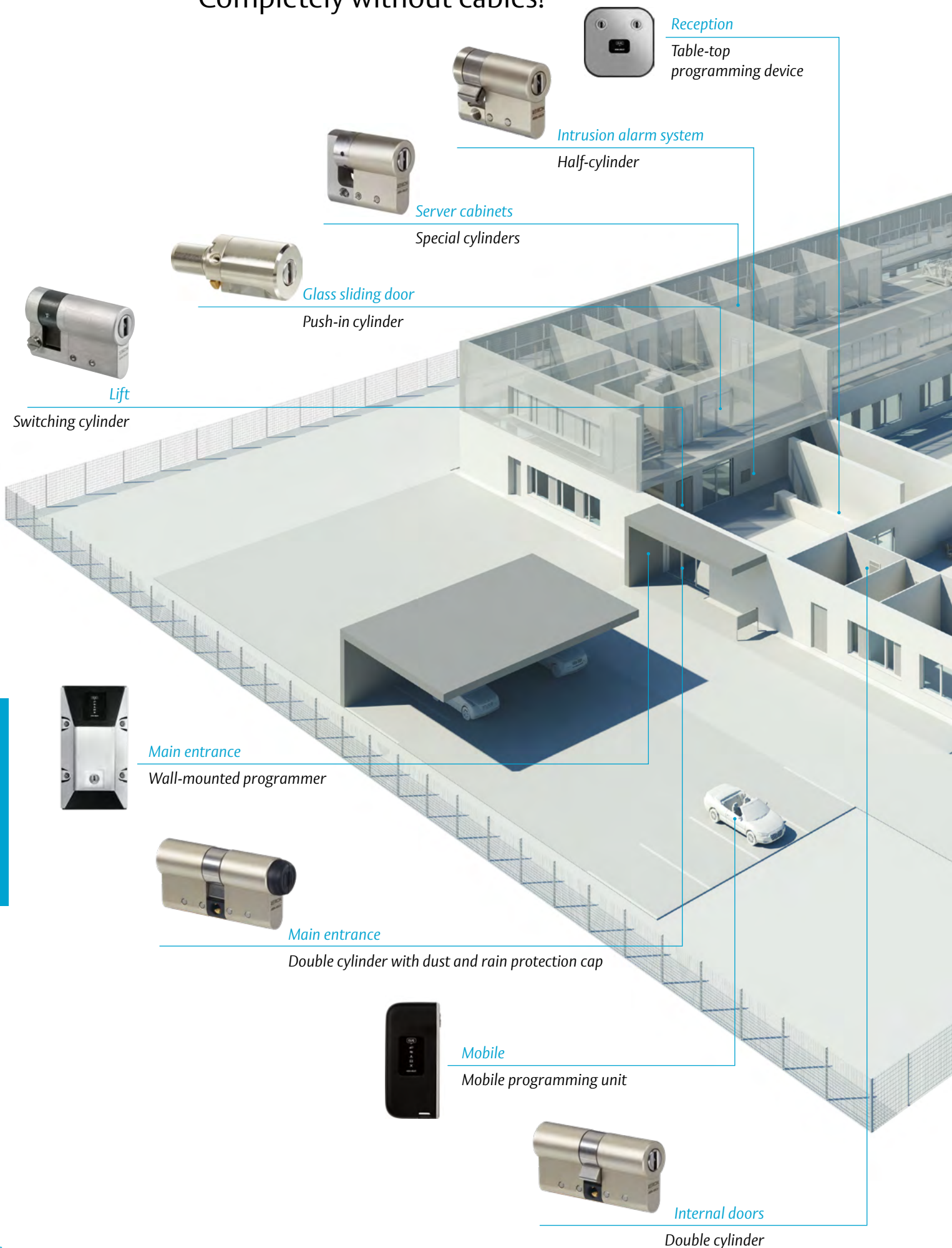

Lockpicking test:
Opening using tampering is known as lockpicking, where no visible destruction takes place. For this, relevant know-how is required, lots of intuition and training.

Expertise

Easy to install anywhere:
Completely without cables!

Reception
Table-top programming device

Intrusion alarm system
Half-cylinder

Server cabinets
Special cylinders

Glass sliding door
Push-in cylinder

Lift
Switching cylinder

Main entrance
Wall-mounted programmer

Main entrance
Double cylinder with dust and rain protection cap

Mobile
Mobile programming unit

Internal doors
Double cylinder

Document cabinet
Furniture cylinder

Machine
Switching cylinder

Control cell
Round cylinder

Outdoor container
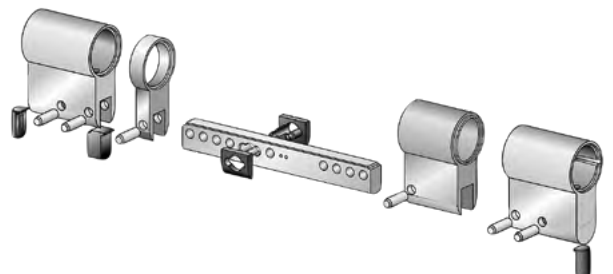Cylinder padlock

Furniture
Furniture lock

Storeroom door
Knob cylinder

Fire service safe
Cylinder for key-safe tube

Letterbox system
Locking lever cylinder

Flexible modular system
Euro profile cylinder in lengths starting from 28 mm per side. Standard lengths extendible in 5 mm increments from 60 mm to 120 mm total length. Special lengths with a total length of 240 mm are also available.

Technology

"Made in Berlin" for over 90 years:
Manufacturer and high-tech forge

In our state-of-the-art production in Goerzallee in Berlin, all products of the different CLIQ® systems are produced, among other things.

We have been developing our cylinder expertise further every day at the site in Berlin for over 90 years: In our production, manual precision work is combined with the latest high-tech methods. With a high level of intuition, real passion and a one hundred percent quality control, we achieve a high quality that is second to none in the sector.

The high proportion of "manual work" in production underlines our special focus on the reliability and durability of our products. All master key systems are put through their paces by us, all cylinders are checked for correct function – nothing leaves our company without us checking the high quality and functional reliability personally.

As a profile cylinder pioneer, we have the right processes and technologies to deliver the highest quality for all application areas. Our high-tech production enables pioneering solutions to be created, that are second to none in the sector.

Only when our locking solutions have met our high standards in the five key experiences investment, security, convenience and technology can we be certain that you have made the right decision for your company.

The ASSA ABLOY Group is the global leader
in access solutions. Every day we help
people feel safe, secure and experience
a more open world.

ASSA ABLOY
Opening Solutions

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