

# An Innovative Door Locking System

for flats and office premises, garages, shopping pavilions, etc.,  
providing users with unique opportunities at minimum cost

## This is about:

1. A unique electromechanical “*Lock-security*” device, which greatly increases the protection against unauthorized opening of mortise and rim locks of almost any design and also performs a number of additional functions that are highly useful for users (see Kharybin O. „It’s high time to throw burglars idle”// F+S: *Security Technologies* №5-6, 2018 <https://www.hag.com.ua/tmp/5.eng.pdf>, as well as patents UA 112511, 12.09.2016 and UA 114136, 25.04.2017).

The birth of this multifunctional device for blocking the deadbolt of locks became possible due to the achievements of modern electronics and the continuous expansion of its areas of application.

2. An innovative method of operating a door locking system ( see: patent UA 127400, 09.08.2023 and international application PCT/IB2021/059324, 17.02.2022 for this invention), expanding the functional possibilities of any *door locking systems* that includes stand-alone or built-in electronically controlled blocking devices. This significant invention in the field of lock products provides a considerable increase in the resistance of such locking systems to unauthorized opening using non-destructive methods, as well as the emergence of fundamentally new operating modes for them

(<https://www.hag.com.ua/tmp/4.eng.pdf>). Due to this, many owners of mobile phones can successfully use them as *setting devices* (i.e. generating a command to unblock the deadbolt) in advanced electronically controlled door locking systems. Moreover, this invention makes it possible to eliminate the use of any external setting devices, which simplifies the installation of the locking system and reduces its cost.

The “*Lock-security*” blocking device allows you to create locking systems with wider functionality than all known non-special purpose locking systems have. And even those that use a unique *Abloy Protec2 CLIQ* door cylinder with an electromechanical blocking device and a microelectronic control unit built into it (hereinafter referred to as “CU”) (see, for instance: <https://abloy.kiev.ua/door-cylinders-abloy-protec2-cliq/>). This makes the “*Lock-security*” a sort of multi-functional smart device compared to any other blocking devices that the lock products market offers.

“*Lock-security*” device can operate in 10 modes assigned by the administrator or installed automatically by the built-in CU upon initialization as part of a specific locking system (see Table 1 in the technical PS on: <https://www.hag.com.ua/tmp/7.eng.pdf>). The choice of operating mode depends primarily on the functional possibilities and number of setting devices used to work with this blocking device.

The full capabilities of “*Lock-security*” are realized only when using mobile phones of any model and any year of manufacture as a setting device. In many cases this allows millions of their owners to refuse to purchase other setting devices. This is largely facilitated by the fact that our patented “*Method of operation of a door locking system*” plays a key role in providing well protected from outside interference emergency unblocking of the lock deadbolt in the absence of mobile network connection due to technical reasons or when it is locally jammed by an intruder.

The simplest of the “*Lock-security*” operating modes ensures that the lock deadbolt is unblocked by pressing a hidden button installed on the outside of the front door. But there are also such modes, that increase the secrecy of the “*lock+Lock-security*” locking system to a level far higher than that of ATMs. And this is possible even when using locks with the simplest security mechanism (<https://www.hag.com.ua/tmp/2.eng.pdf>).

The high consumer value of “*Lock-security*” is due not only to its unique capabilities, but also to the fact that this blocking device is *low-budget* and, therefore, quite affordable to millions of potential users. For example, its price during mass production will be several times (!) less than the existing price of the *Abloy Protec2 CLIQ* cylinder. And even comparable to the price of the only one key to it (<https://www.hag.com.ua/tmp/6.eng.pdf>). This was achieved by using microelectronic components from the lower price range in the manufacturing of “*Lock-security*”, as well as simple mechanical parts borrowed

from commercially produced household devices or manufactured using new technologies (for example, laser cutting of metal instead of milling) and from new materials (in particular, powerful, but at the same time cheap permanent magnets made of neodymium-iron-boron).

The “*Lock-security*” modification intended for the widest possible range of users is programmed without the use of a PC or programmers. Well-protected programming from unauthorized intervention is performed from a mobile phone of any model. In this case, the administrator can be one of the users (*Main User*), who will be able to program the blocking device following the detailed *Programming Instruction*.

**Summary:**

Above we briefly present the unique capabilities of the “*Lock-security*” multifunctional blocking device with an emphasis on the extremely important role of the algorithm of actions protected by our patent with the regular key of the lock. These actions will undoubtedly enhance the commercial success of this and other electronically controlled blocking devices.

High consumer demand for the “*Lock-security*” multifunctional blocking device is reliably guaranteed by its low price with the real possibility of creating effective systems for locking doors of residential and office premises, garages, shopping pavilions, etc. Success is also facilitated by the fact that in many cases, when installing such locking systems, it is possible to use mortise and rim locks of almost any design previously installed on the doors of these objects.