Bump proof locks

- GEGE pExtra
- Anker 3800
- Kaba Penta
- M&C Antiklop
- Ikon WSW
- Abloy Disklock
- Abloy Protec
- Medeco Biaxial
- EVVA MCS
- EVVA DUAL
- Kaba Gemini S
- EVVA DPI (Modulair)
- EVVA 3KS
- Kaba Quattro S
- …

Discussed Bump proof locks

Modified Pin tumbler systems (kinetic energy can be transferred)

- CES => pin tumbler
- Gege pExtra => pin tumbler
- M&C => pin tumbler
- Kaba Penta / Quattro S / Gemini S => pin tumbler/dimple

Special lockingsystems:

- Abloy Protec => disc-system
- EVVA 3KS => slider-system
- Medeco Biaxial => sidebar system
- Ikon Sperwellen => fingerpins / sidebar system
- EVVA MCS Magnetic Code System => Magnetic-system

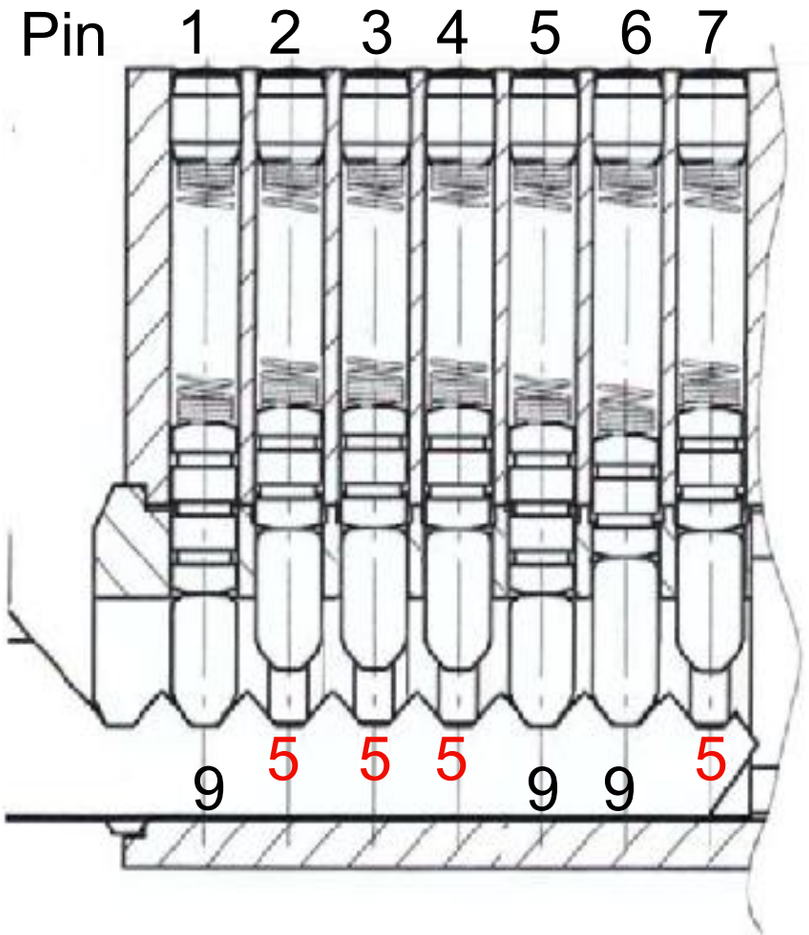
* see Toool-website for a complete list of bump proof cylinders.

How do you make a lock bump proof?

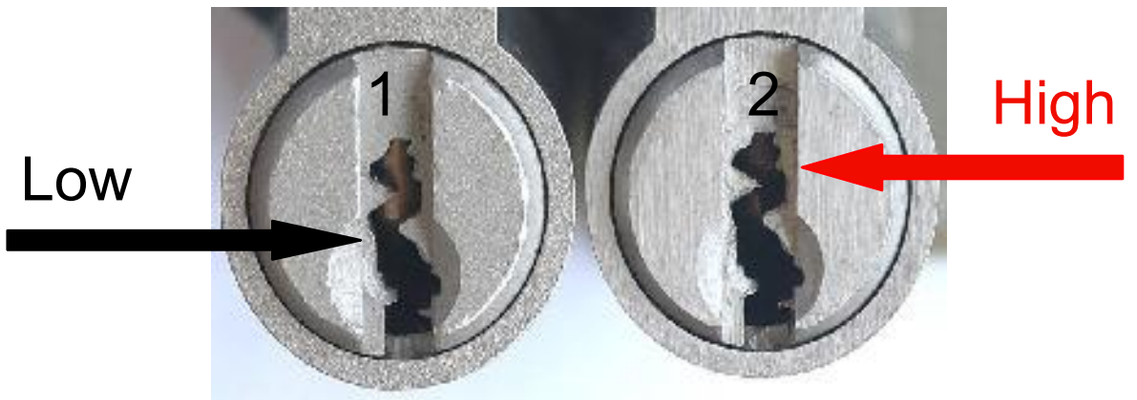
Counter measures

- Create gap between bumpkey and bottom pins.
- Create gap between top pin and bottom pin
- Second line of “trap pins”
- Shape of bottom pins
- Shape of top pins
- Use non pin tumblers (sliders, discs, magnets)
- Sidebar mechanism
- …

CES VA5 / VB7 (Carl-Eduard-Schulte)



CES VB7(1)

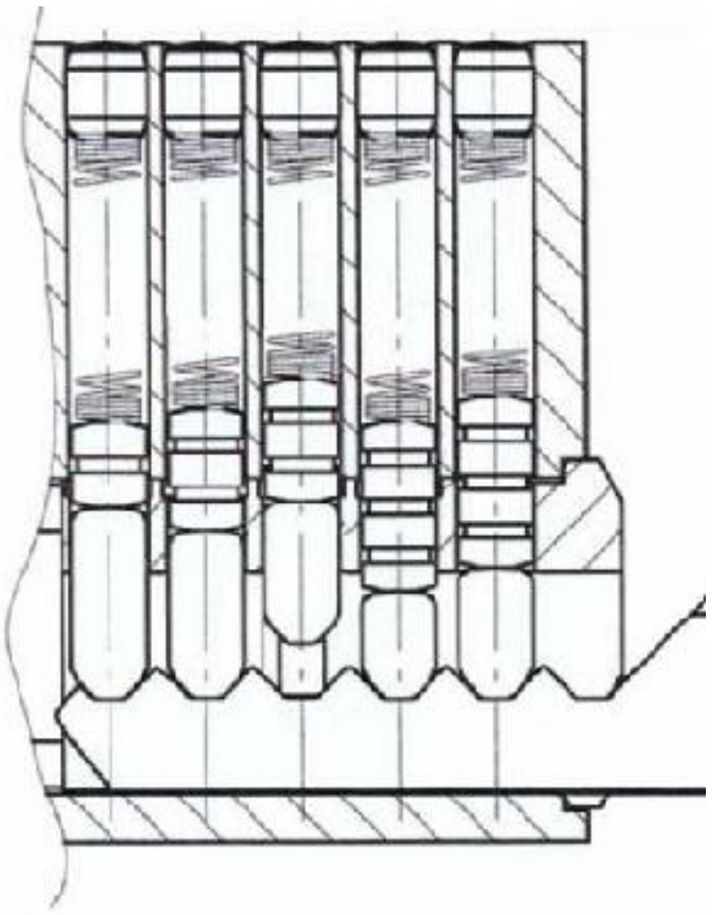


frontview keyways

Pins VB7(1) bumpkey		Pins VB7(2) bumpkey	
1. Low	9-cut	1. High	5-cut
2. High	5	2. Low	9
3. High	5	3. High	5
4. High	5	4. High	5
5. Low	9	5. Low	9
6. Low	9	6. Low	9
7. High	5	7. High	5

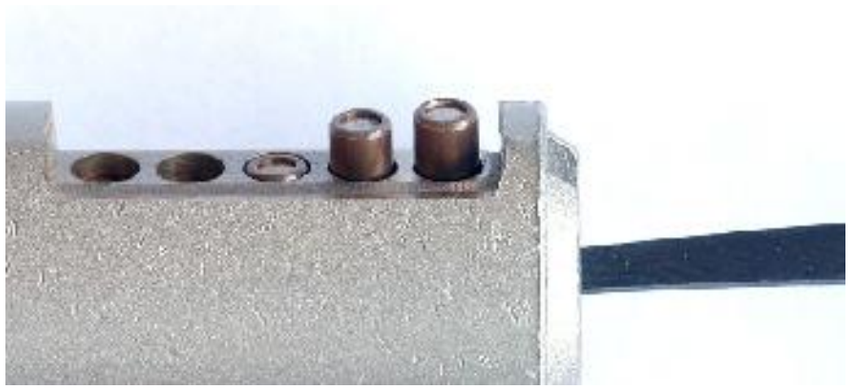
CES VA5

Pin 5 4 3 2 1



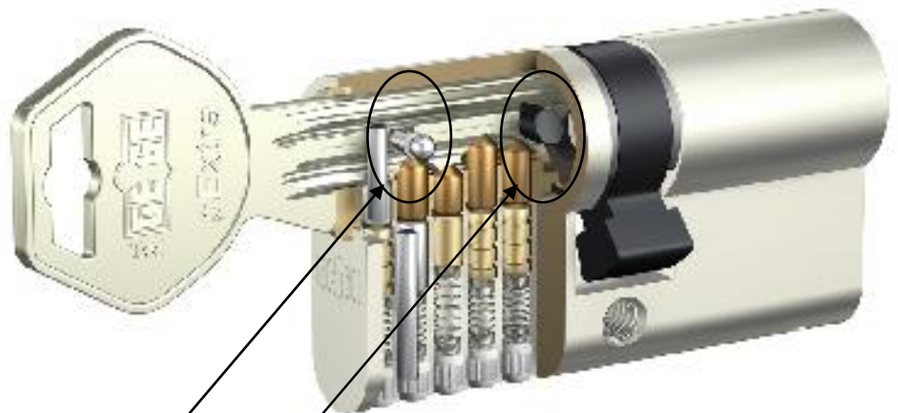
CES VA5

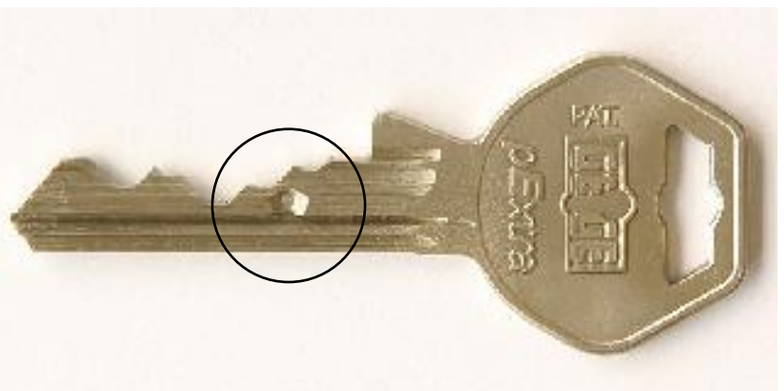
VA5 key



CES picked?

Gege pExtra Cutaway view





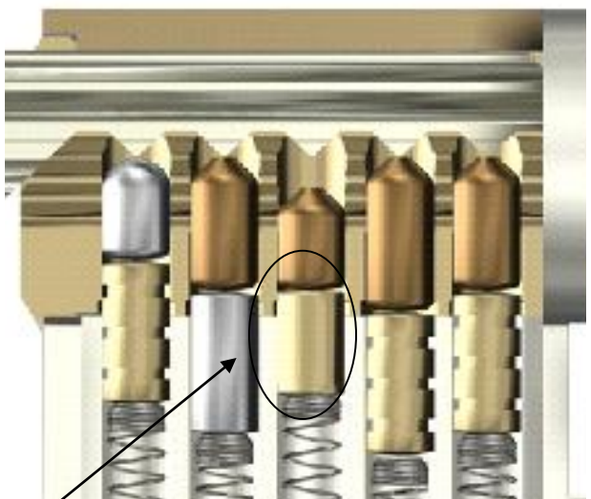
Passive pin

Passive slider

Security features:

- Restricted key profile
- Special mushrooms to frustrate lockpicking
- Undercut => Easy entrie protection 1
- Passive slider => Easy entrie protection 2
- Passive pin => Easy entrie protection 3
- Rapid pin (bumpkey protection)

Gege pExtra Bumpkey protection



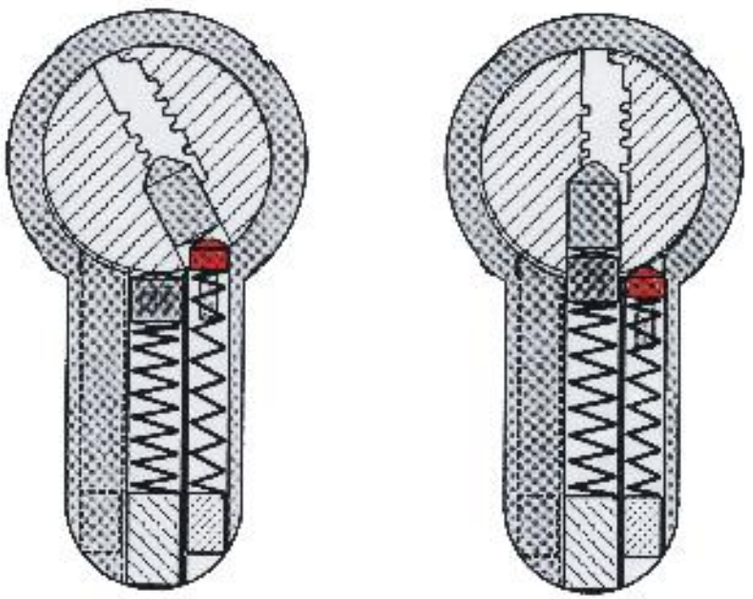
The centering pin (Rapid pin) prevents one of the tumbler pins from making contact with the bumping key.

Rapid pins

Plug + rapid pin

M&C Antiklop (Mitchel & Collin)

How does it work?



What we tried:

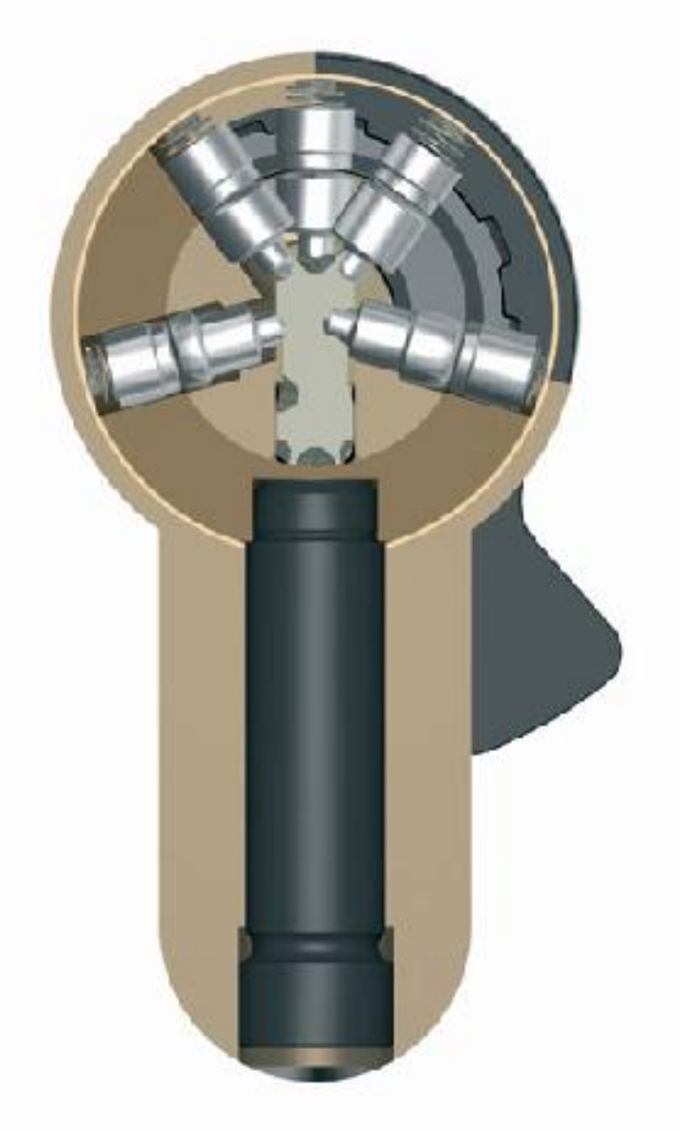
- push back the trap pins
- twister
- thread

Security features:

- 5 or 6 pins
- two rows of trap pins (bumping safety pins)

Blocked M&C cylinder with thread

Kaba Penta Frontview

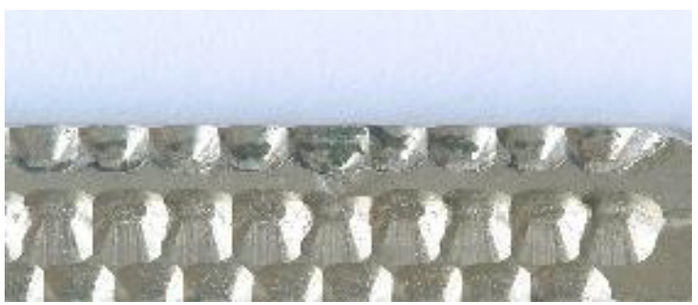


Security features:

- Up to 22 pin pairs
- 5 rows arranged radially
- dimple holes and pins made with
  < 0.01 mm tolerances
- extremely drill-resistant
- pull-out protection (>15.000 Newton)
- Protected against impression method

Kaba Penta Bump protection

A factory made Kaba bumpkey



A used bumpkey

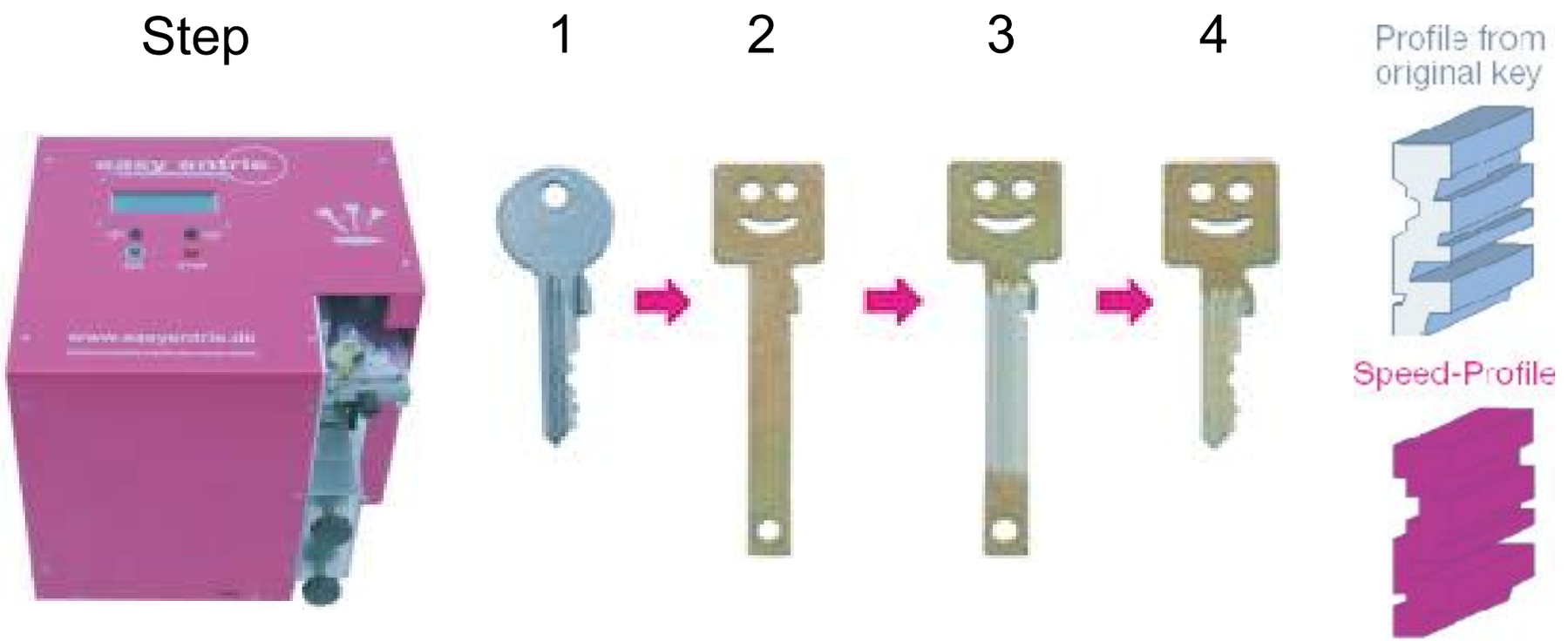
That’s why, The pins!

Extra security features

Features a security cylinder should have:

- Security card
- Key copy protection
- Drill protection
- Pull out protection (corkscrew)
- Manipulation proof
- Great number of different keys
- Special mechanism
- …

Easy entrie (key profile-cutting-unit)



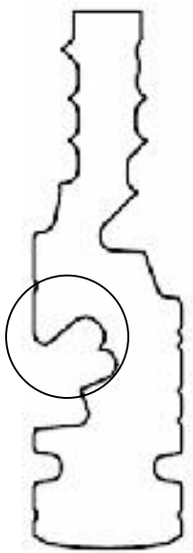
Start cutting key profiles yourself!

With this profile-cutting-unit, quick, easy, inexpensive.

Easy entrie GEGE pExtra manipulated keys

Keyway

Frontview Keys



Original key

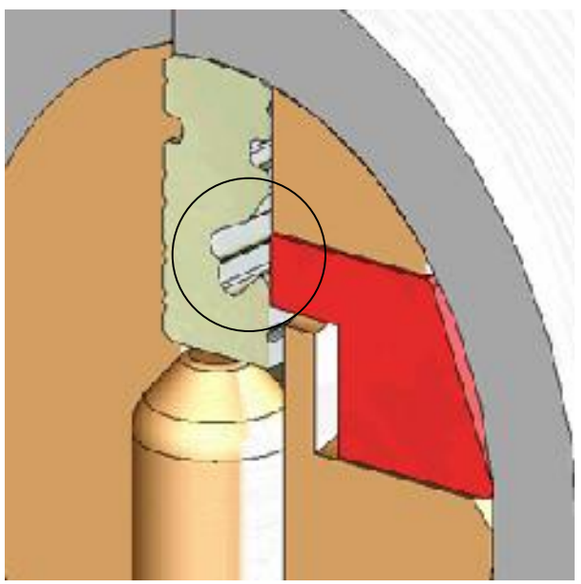
Easy entrie key 1

Easy entrie key 2

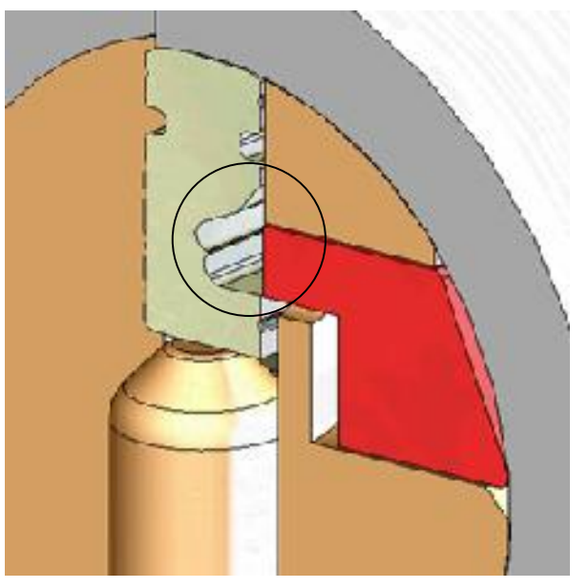
pExtra = Patented Profile System with Extra Protection

Gege pExtra – How does the Passive Slider work.

Original key



Easy entrie key 2



Kaba Penta Pull out protection

Penta
cutaway view

Keyway

Broken screw

More info about these locks on the Toool website

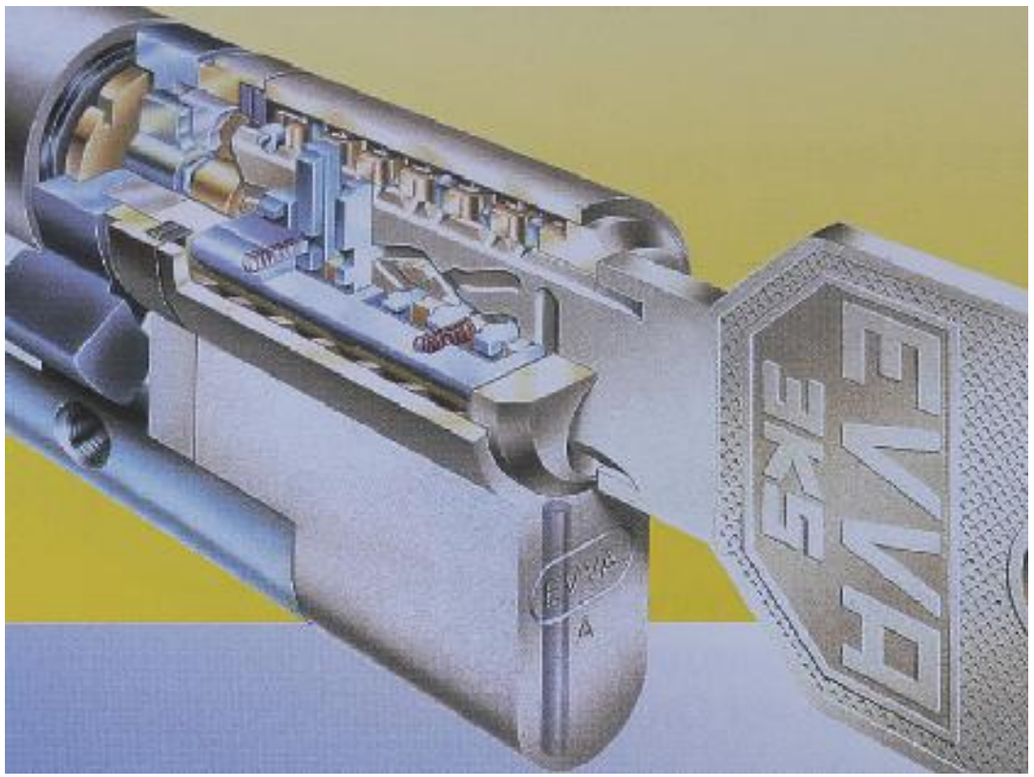
Bump proof cilinders, WTH 2005, Barry Wels and Han Fey

Abloy Protec Cutaway view

Security features:

- rotating disc cylinder
- 11 discs (1.97 biljoen comb.)
- Virtually pickproof
  (DBS => Disc Blocking System)
- durable and reliable operation

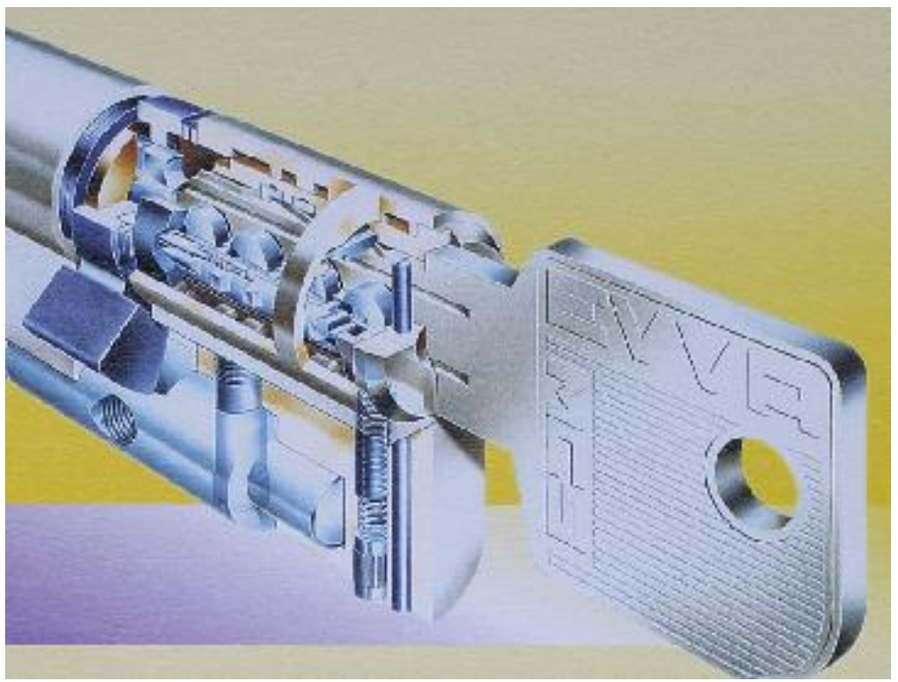
EVVA 3 KS Cutaway view



Security features:

- 12 springless sliders
- 2 separate lockingbars
- Additional bottom bar
- Copy proof key
- Manipulation proof
- Great number of different keys (30.000.000.000.000, 30 biljoen)

EVVA MCS Magnetic Code System



Security features:

- 3 locking systems
  - 2 mechanical
  - 1 magnetic (Samarium-Cobalt 5)
- Additional sliders (7)
- Copy proof key
- Manipulation proof
- Great number of different keys
  (299.000.000.000.000.000.000.000)