INSECURITY ENGINEERING: Analysis of Design Defects

PRESCRIPTION DRUG CONTAINERS

INSECURITY ENGINEERING

- DEFICIENT OR DEFECTIVE PRODUCTS
  - Intersection of mechanical and security engineering
- FALSE SENSE OF SECURITY
  - What appears secure is not
  - How do you know the difference?
  - Undue reliance on standards
- MISREPRESENTATIONS BY MFG

MANUFACTURER RESPONSIBILITIES

- UNIQUE RESPONSIBILITY FOR COMPETENCE
  - MECHANICAL ENGINEERING
  - SECURITY ENGINEERING
- IMPLIED REPRESENTATIONS
  - "WE ARE EXPERTS"
  - SECURITY OF THEIR PRODUCTS
  - REPRESENTATIONS
  - "WE MEET OR EXCEED STANDARDS"

EXPERTISE REQUIRED IN LOCK DESIGN

- MECHANICAL ENGINEERING
- SECURITY ENGINEERING
- MINIMUM INDUSTRY STANDARDS REQUIRE LEVEL OF KNOWLEDGE
- SECURITY ENGINEERING REQUIRES:
  - UNDERSTAND USE OF WIRES, MAGNETS, PAPERCLIPS, BALL POINT PENS, ALUMINUM FOIL…..
  - BYPASS TECHNIQUES

ENGINEERING FAILURES: RESULTS AND CONSEQUENCES

- INSECURITY ENGINEERING
  - Insecure products
  - Often easily bypassed
  - Products look great but not secure
  - False sense of security
  - Drug containers: deadly consequences

COST AND APPEARANCE v. QUALITY AND SECURITY

- DO YOU GET WHAT YOU PAY FOR?
- 2$ LOCKS ARE 2$ LOCKS!
- SHORTCUTS DO NOT EQUAL SECURITY
- CLEVER DESIGNS MAY REDUCE SECURITY
- PATENTS NOT GUARANTEE SECURITY

EXAMPLES: INSECURITY ENGINEERING

- PRESCRIPTION DRUG SAFES
  - Four models tested, all defective
- BIOMETRIC FINGERPRINT LOCK
- ELECTRONIC RFID LOCK
- CONSUMER ELECTRONIC SAFE
  - All appear secure: None are!
  - This year, focus on wider problem
  - Representative sample

DRUG SAFES: WHY NEEDED

- 63,000 Opioid deaths last year
- Access to prescription drugs by kids
- Answer: prevent access
- Analyzed four major brands: all easily open
  - LockMed
  - Saferlock
  - Pillpod
  - Vaultz

LOCKMED: LOCKED

LOCKMED: UNLOCKED

LOCKMED OPEN

PILLPOD


secure your meds
protect your family
convenient to use
stores eight bottles
PILLPOD
PILLPOD

PILLPOD

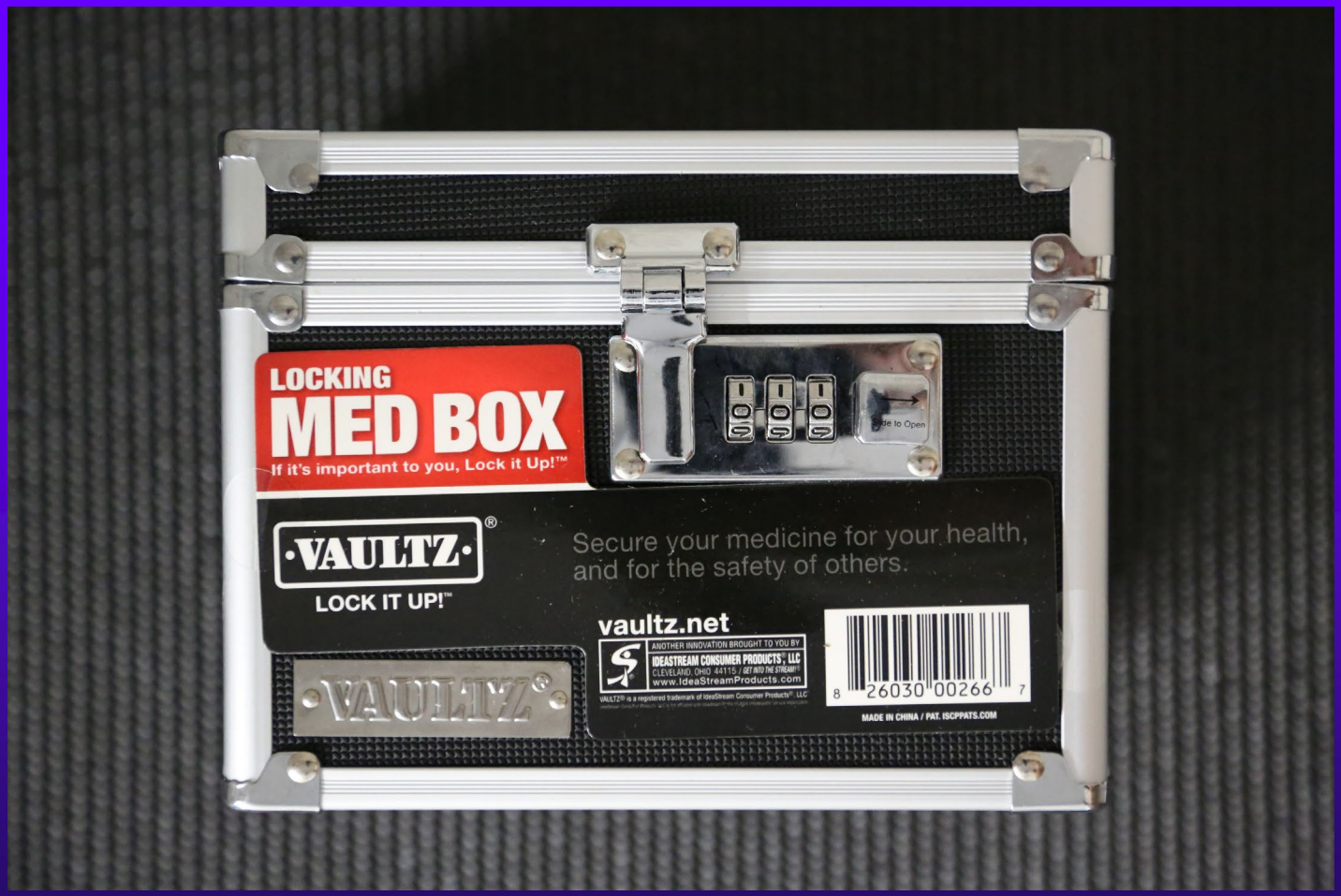

secure your meds
protect your family
convenient to use
stores eight bottles
PILLPOD
THOUGHT PRODUCTS

PILLPOD OPENING

SAFERLOCK

SAFERLOCK CAP DETAIL

VAULTZ


LOCKING
MED BOX
If it's important to you, Lock it Up!™
VAULTZ®
LOCK IT UP!™
Secure your medicine for your health, and for the safety of others.
vaultz.net
ANOTHER INNOVATION BROUGHT TO YOU BY
IDEASTREAM CONSUMER PRODUCTS™, LLC
CLEVELAND, OHIO 44115 / GET INTO THE STREAM!
www.IdeaStreamProducts.com
VAULTZ® is a registered trademark of IdeaStream Consumer Products® LLC
8 26030 00266 7
MADE IN CHINA / PAT. ISCPPATS.COM
VAULTZ®

VAULTZ LOCK OPENING

DRUG CONTAINERS: Opening in seconds

- All defective designs
- Offer little protection
- Simple locking mechanisms
- Kids can open
- Are they better than nothing?
- False sense of security

TRADITIONAL LOCK DESIGN DEFECTS

- KWIKSET OLD DESIGN
- RFID-BASED DEADBOLT
- ELECTRONIC SAFE
- FINGERPRINT LOCK

EXAMPLE #1: KWIKSET SMART KEY®

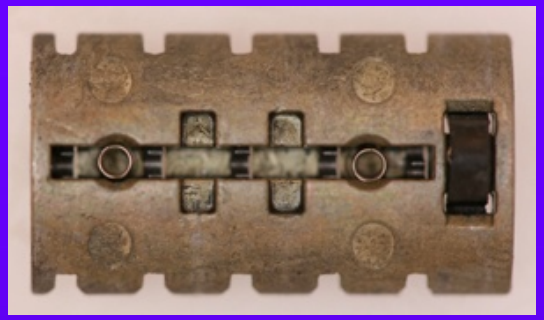
KWIKSET SMART KEY®

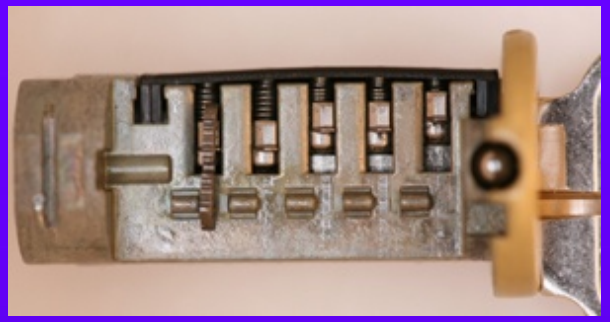
- ABOUT $2 TO MANUFACTURER LOCKING ELEMENT
- CLEVER DESIGN: RE-PROGRAMMABLE
- MILLIONS SOLD EVERY YEAR
- EXTREMELY POPULAR LOCK
- HAS BEEN REDESIGNED

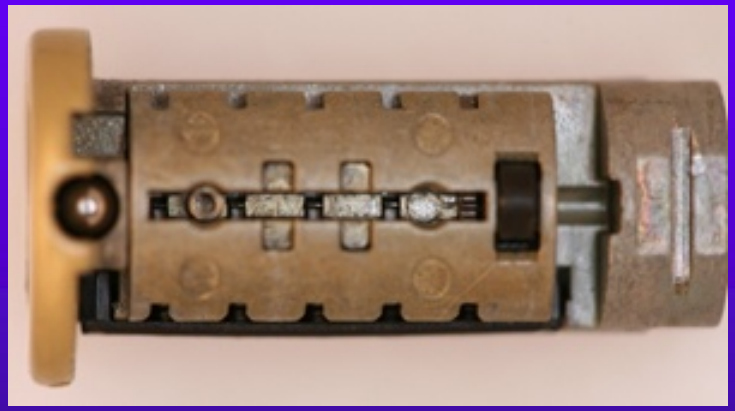
KWIKSET ATTRIBUTES

- CLEVER DESIGN
- PROGRAMMABLE
- COPIED AND MODIFIED EARLIER DESIGNS
- CANNOT BUMP, BUT NOT DESIGNED TO BE BUMP RESISTANT
- DIFFICULT TO PICK
- RATINGS

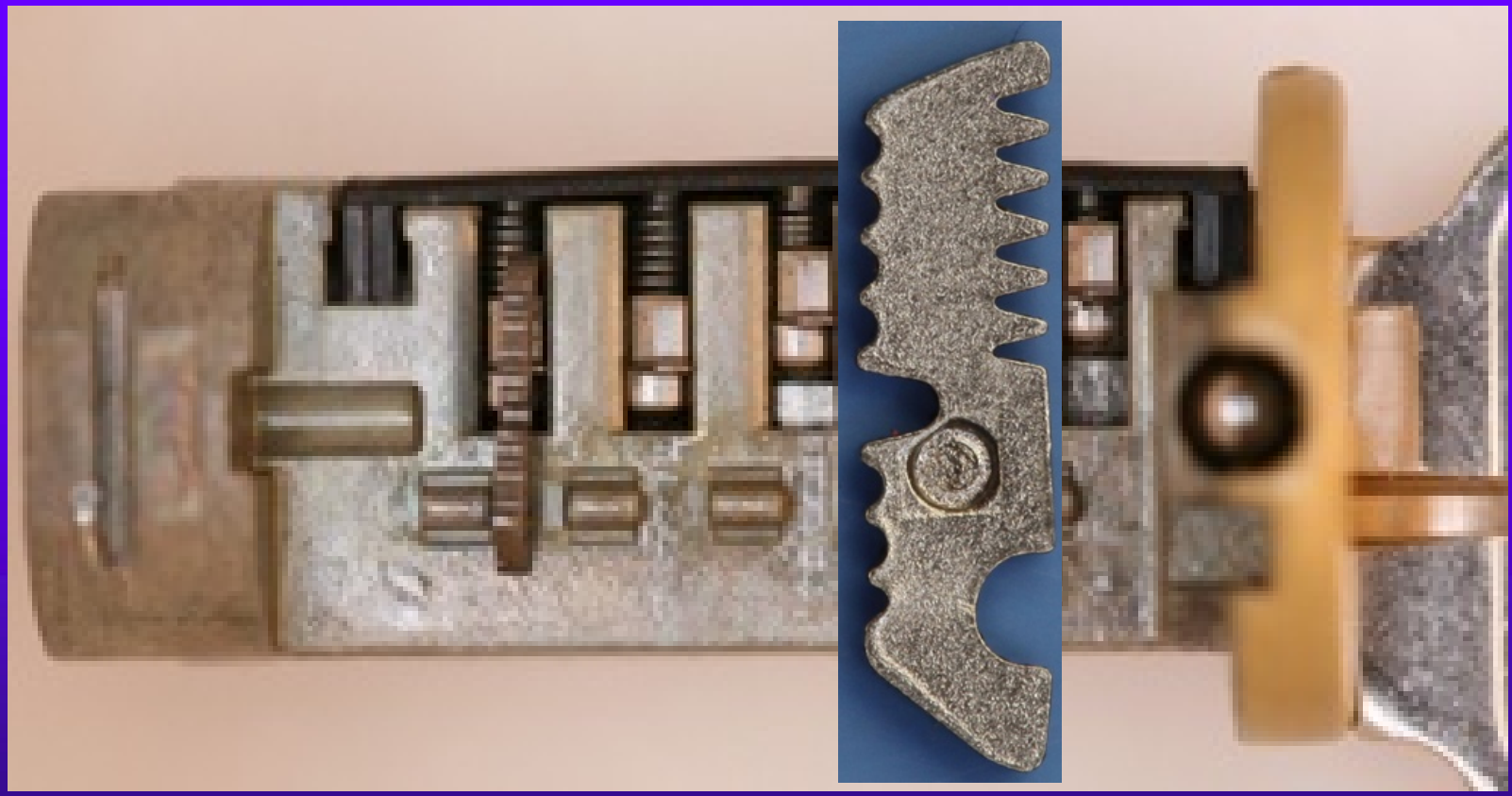
HOW SMART KEY WORKS







SMARTKEY PRINCIPLE



ADJUSTABLE SLIDERS = KEY BITTING DEPTHS

SLIDERS = SMARTKEY SECURITY

OPEN IN THIRTY SECONDS:
SCREWDRIVER + VICE GRIP + KEY

OPEN IN THIRTY SECONDS

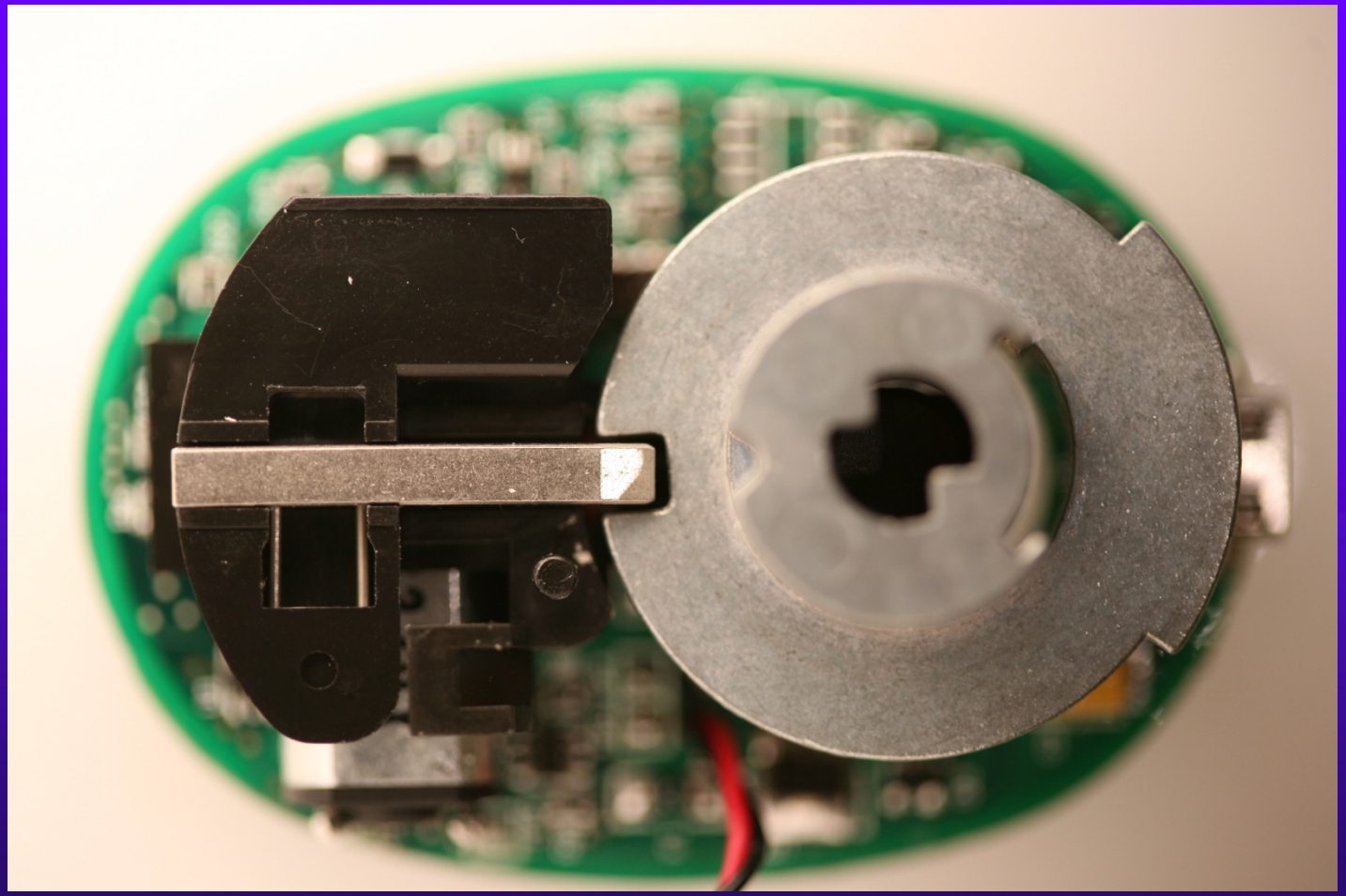
EXAMPLE #3: KABA IN-SYNC RFID-BASED LOCK

INSYNC RFID KEY LOCK

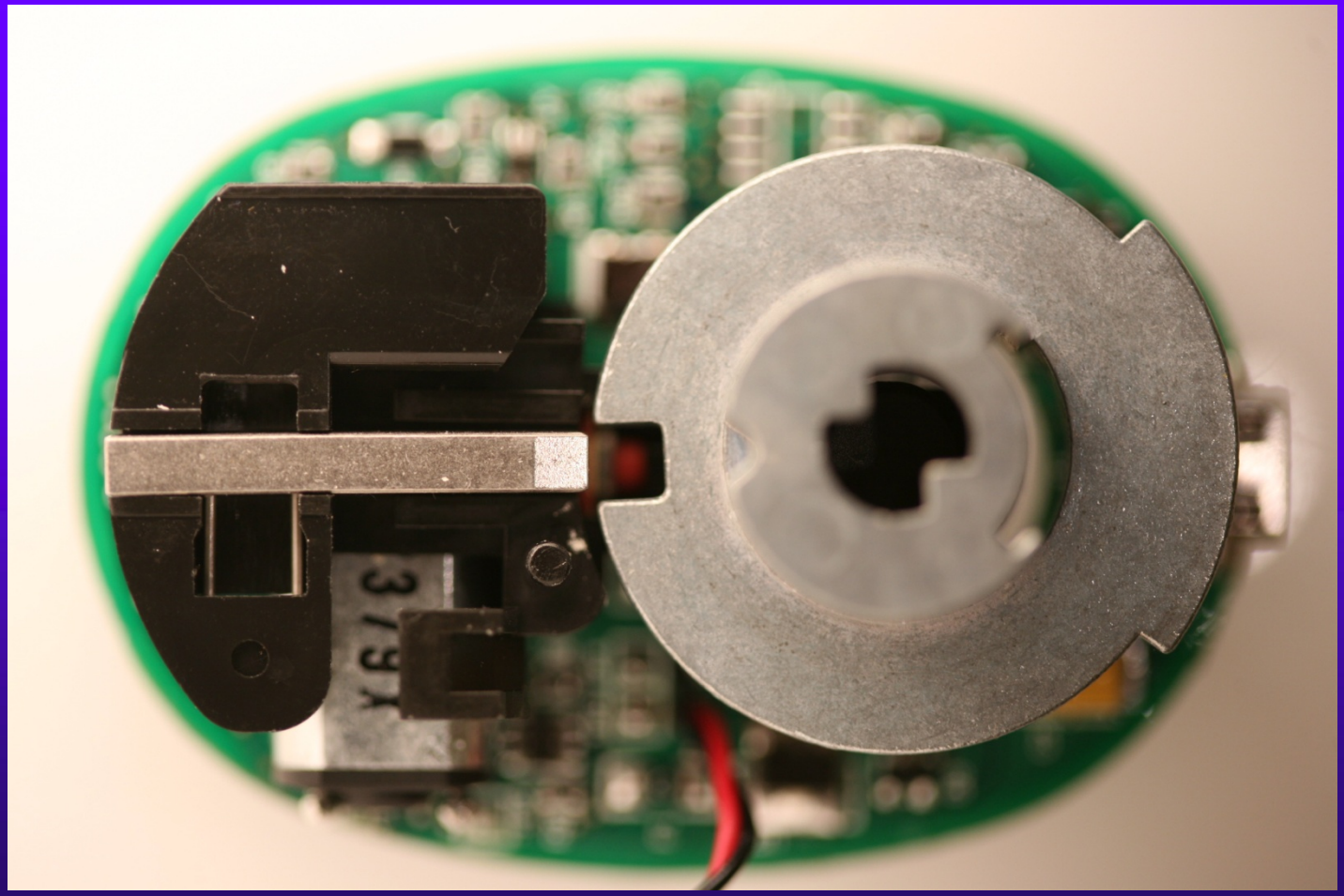
KABA IN-SYNC ATTRIBUTES

- WIDE APPLICATOIN
- AVAILABLE FOR SEVERAL YEARS
- MILITARY AND CIVILIAN APPLICATIONS
- USE SIMULATED PLASTIC KEY WITH RFID
- AUDIT TRAIL

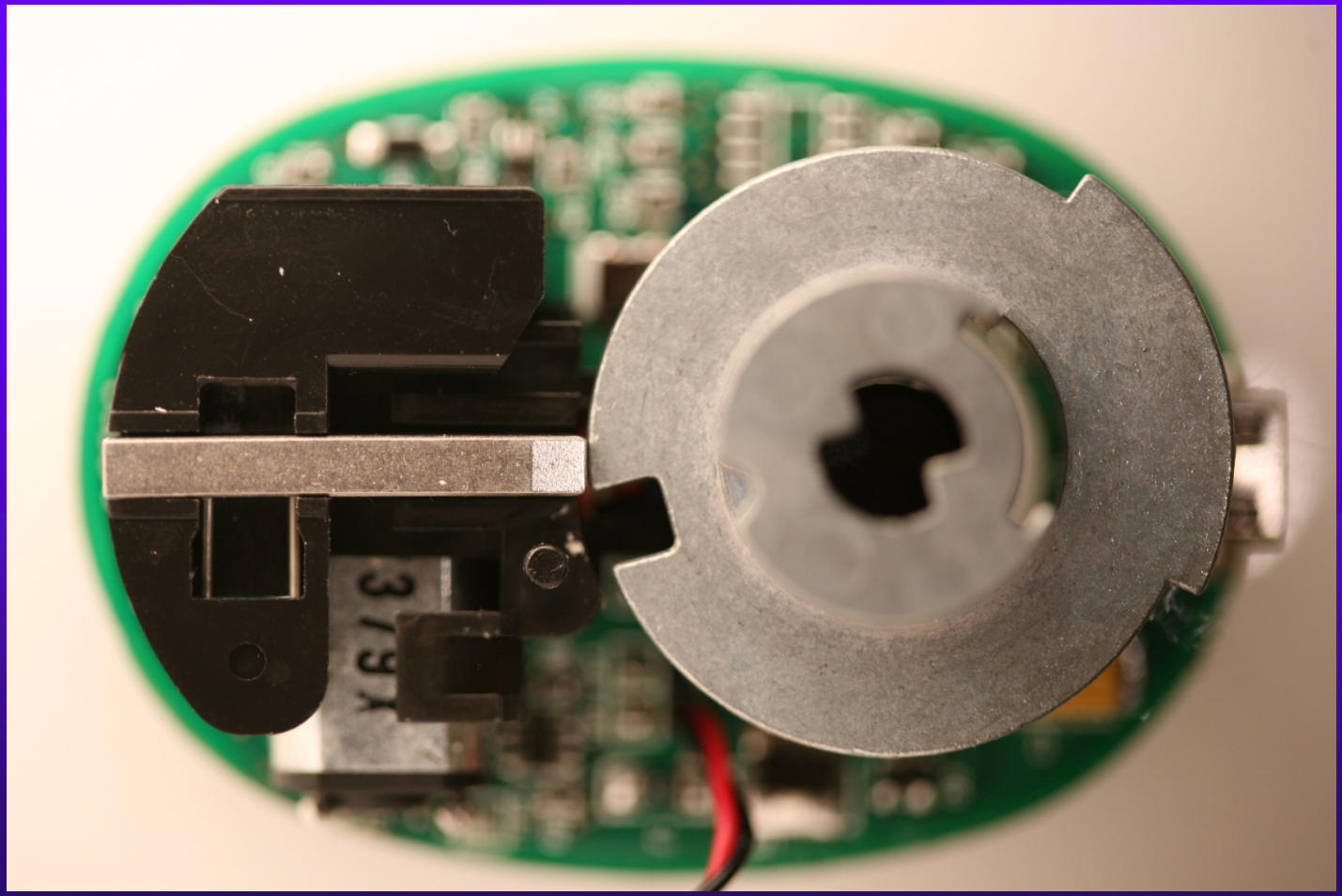
IN-SYNC INTERNAL MECHANISM: LOCKING



BOLT RETRACTS



TURN TO OPEN



INSYNC-D MARKETS

- COMMERCIAL
- APARTMENT COMPLEXES
- MILITARY FACILITIES AND HOUSING
- CHURCHES

INSYNC MEETS PAPERCLIP

KABA INSYNC: INSECURITY 101

EXAMPLE #4: AMSEC ES1014 CONSUMER "SAFE"

ELECTRONIC KEYPAD

AMSEC SAFE ES1014 AND OTHERS

- CONSUMER LEVEL SAFE
- $100 FOR SMALLEST UNIT
- ELECTRONIC KEYPAD
- HOW MUCH SECURITY EXPECTED?
- INCOMPETENT DESIGN
- FOUND IN MANY OTHER SAFES
- CHINESE IMPORT

AMSEC: INSECURITY RESET

AMSEC SAFE: INSECURITY 101

FILE FOLDER “SLIM JIM”

FILE THIS UNDER INCOMPETENCE

OPEN SESAME!

EXAMPLE #5: BIOLOCK 333

BIOMETRIC LOCK

- FINGERPRINT + BYPASS CYLINDER
- LOOKS SECURE
- $200 OR MORE
- INSECURITY ENGINEERING AT ITS BEST

BYPASS LOCK = BYPASS SECURITY

PAPERCLIP: HIGH-TECH BYPASS FOR BIOLOCK

LESSONS LEARNED

- CLEVER ≠ SECURITY
- LOCKS REQUIRE BOTH MECHANICAL AND SECURITY ENGINEERING
- PATENTS DON'T GUARANTEE SECURITY
- STANDARDS DO NOT MEAN SECURITY

INSECURITY ENGINEERING: Locks, Lies, and Videotape

mwtobias@securitylaboratories.org

tbluzmanis@securitylaboratories.org