

Kaba Mechanical Lock Cylinders Factory-made Systems at a Glance

Kaba gemini S



System Features

- 3 radially arranged tumbler pin rows
- Up to 16 tumbler pins
- A total of 32 tumbler pin positions
- Special shape of tumbler pins against picking, suited for small to medium sized master key systems
- 149 billion individual keyings
- 369 billion key combinations
- Patent protection until 2009

Kaba gemini S key

- Standard clip color - blue



- Version with round bow



Kaba quattro S



System Features

- 4 radially arranged tumbler pin rows
- Up to 22 tumbler pins
- A total of 44 tumbler pin positions
- Special shape of tumbler pins protects against picking
- Suitable for large and complex master key systems
- More than 2 trillion individual keyings
- More than 1 quadrillion key combinations
- Patent protection until 2009

Kaba quattro S key

- Standard clip color - blue



- Version with armored bow



Kaba quattro pluS



System Features

- 4 radially arranged tumbler pin rows
- Up to 22 tumbler pins
- A total of 44 tumbler pin positions
- Special shape of tumbler pins protects against picking
- Suitable for large and complex master key systems
- More than 2 trillion individual keyings
- More than 1 quadrillion key combinations
- Patent protection until 2021

Kaba quattro pluS key

- Standard clip color - blue



- Armored bow key with or without clip



Kaba penta



System Features

- 5 radially arranged tumbler pin rows
- Up to 22 tumbler pins
- A total of 85 tumbler pin positions
- Special shape of tumbler pins protects against picking
- Suitable for large and complex master key systems
- 867 trillion individual keyings
- 31 septillion key combinations
- Patent protection until 2021

Kaba penta key

- Standard clip color - dark red



- Armored bow key with or without clip



Kaba Mechanical Lock Cylinders Dealer Systems at a Glance

For Hong Kong & China

Kaba gemini T

Kaba expert



System Features

- 3 radially arranged tumbler pin rows
- Up to 16 tumbler pins
- A total of 32 tumbler pin positions
- Special shape of tumbler pins protects against picking
- suitable for serial keyings
- Patent protection until 2009

Kaba gemini T key

- Standard clip color - blue



- Version with round bow



System Features

- 4 radially arranged tumbler pin rows
- Up to 22 tumbler pins
- A total of 44 tumbler pin positions
- Special shape of tumbler pins protects against picking
- suitable for medium to large sized master key systems
- Patent protection until 2021

Kaba expert key

- Standard clip color - blue



- Armored bow key with or without clip



Kaba Mechanical Lock Cylinders Old Systems at a Glance



Kaba gemini



System Features

- 3 radially arranged tumbler pin rows
- Up to 16 tumbler pins
- A total of 32 tumbler pin positions
- Not for new systems, only for duplicate orders and extensions

Kaba gemini key

- Version with round bow



Kaba quattro



System Features

- 4 radially arranged tumbler pin rows
- Up to 22 tumbler pins
- A total of 44 tumbler pin positions
- Not for new systems, only for duplicate orders and extensions

Kaba quattro key

- Version with round bow



Mechanical mortise lock cylinder program

/ Systems System features /	Kaba gemini T System code number = 9	Kaba expert System code number = 5
Reversible key system	yes	yes
Highest locking security	yes	yes
Patent protection by patent no. Valid until	AT 396.502 ¹⁾ 2009	WO 01/177466 2021
Number of unique keyings Number of key combinations		907 billion 76.1 trillion
Individual keyings for a master key		up to 12,870
Suitable for medium and large sized master key systems		yes
Suitable for Highly complex master key systems	-	-
Number of radially arranged tumbler pin rows	3	4
Burglar proof according to EN1303: Key Related Security Grade 6 Attack Resistance Grade 2 ²⁾	yes yes	yes yes
DIN 18252, Grade 82, increased burglary resistance in master key system (in series)		yes
VdS Test Grade B in series Drilling Protection Drilling and pulling protection Master key system security	-	M105323 M105324 M105325
Key with long bow for cylinder armoring	yes	yes
Key can only be obtained from manufacturer with Security card, signature and/or password	From contracting party	From contracting party
Integration of furniture, switch and cam locks in the master key systems	yes	yes
Master key system works with short cylinders, basic length 25/35 mm	yes	yes
Upward compatible to electronic and mechatronic master key systems	yes	yes

1) Also patented throughout Europe and Asia

2) With additional security elements

Technical overview

Kaba gemini S System code number = 2	Kaba quattro S System code number = 4	Kaba quattro pluS System code number = 7	Kaba penta System code number = 6
yes	yes	yes	yes
yes	yes	yes	yes
AT 396.502 ¹⁾ 2009	AT 396.502 ¹⁾ 2009	WO 01/177466 2021	WO 01/77466 2021
149 billion 369 billion	> 2 trillion > 1 quadrillion	> 2 trillion > 1 quadrillion	> 500 trillion > 30 septillion
up to 87,000	> 30 million	> 30 million	> 50 million
	yes	yes	yes
4	4	4	5
yes yes	yes yes	yes yes	yes yes
yes	yes	yes	yes
	M104335 M104336 M104337	M106341 M106342 M106343	M105338 M105339 M105340
yes	yes	yes	yes
yes	yes	yes	yes
yes	yes	yes	yes
yes	yes	yes	yes
yes	yes	yes	yes

Kaba lock cylinders

General Information

Kaba lock cylinders are ergonomically correct reversible key systems. The tumbler pin positions are arranged on each cylinder side in 3, 4 or 5 rows in a radial pattern around the keyway. The cylinder is hereby reliably resistant against picking - even with modern tools.

The additional codes required for master key systems are not achieved by using additional subdivisions of the tumbler pins, which would decrease security considerably, but rather by using a different arrangement of the tumbler pins in the cylinder. Central locks are coded via a special groove on the key. In this way, they are as secure as individual locks.

Kaba profile cylinders are serially equipped with increased drilling protection. All tumbler pins are made from hardened, chemically nickel plated steel. In addition, a 4 mm thick stud bolt made from hardened steel is also integrated into the cylinder body for each cylinder side.

The reversible key is protected against copying to a high degree. The code on factory made keys is not made by drilling but by using a special milling process which conceals the exact position of the code on the key. The key is made from nickel silver and offers high break resistance, the best gliding properties and the lowest wear.

Special labeling on the key and cylinder is possible if desired by the system user. A security card is required to receive duplicate keys (optional with signature and code).

Features of Kaba Master Key Systems

1. Kaba master key systems quattro S, quattro pluS and pentameet all the requirements of **VdS approval for Grade B**. In addition, they also fulfill **DIN 18252** and **European Standard EN 1303 Key Related Security Grade 6** requirements. With additional security elements, they can also meet European Standard **EN 1303 Attack Resistance Grade 2** requirements.
2. The systems Kaba quattro pluS and penta are suitable for **large master key systems**. For example, there are more than 30 million individual locks possible for a system master key for Kaba quattro pluS and 50 million for Kaba penta.
3. Kaba systems are **ergonomically correct reversible key systems**, i.e. the Kaba reversible key is inserted vertically into the cylinder keyway.
4. Central lock functions for Kaba systems are implemented without a loss of security, i.e. **without additional pin subdivision**.
5. Kaba security master key systems offer maximum customer protection. System keys are **copy-protected** by a technological and patented copy protection process.

A specially designed key tip prevents unauthorized keys from being inserted into the keyway.

Replacement keys are produced without exception at the factory after checking the **security card** and/or code.
6. Kaba keys are manufactured from **wear-resistant nickel silver** and delivered with a colored clip bow (standard: Kaba blue, for penta dark red). An additional 11 colors are also available as an option.
7. Systems have up to **32, 44 and/or 85 tumbler pin positions** per cylinder side. Unlocking security is also increased through the use of special pin shapes. The block lengths of the pin pairs are always the same - this provides the highest security against lock picking.

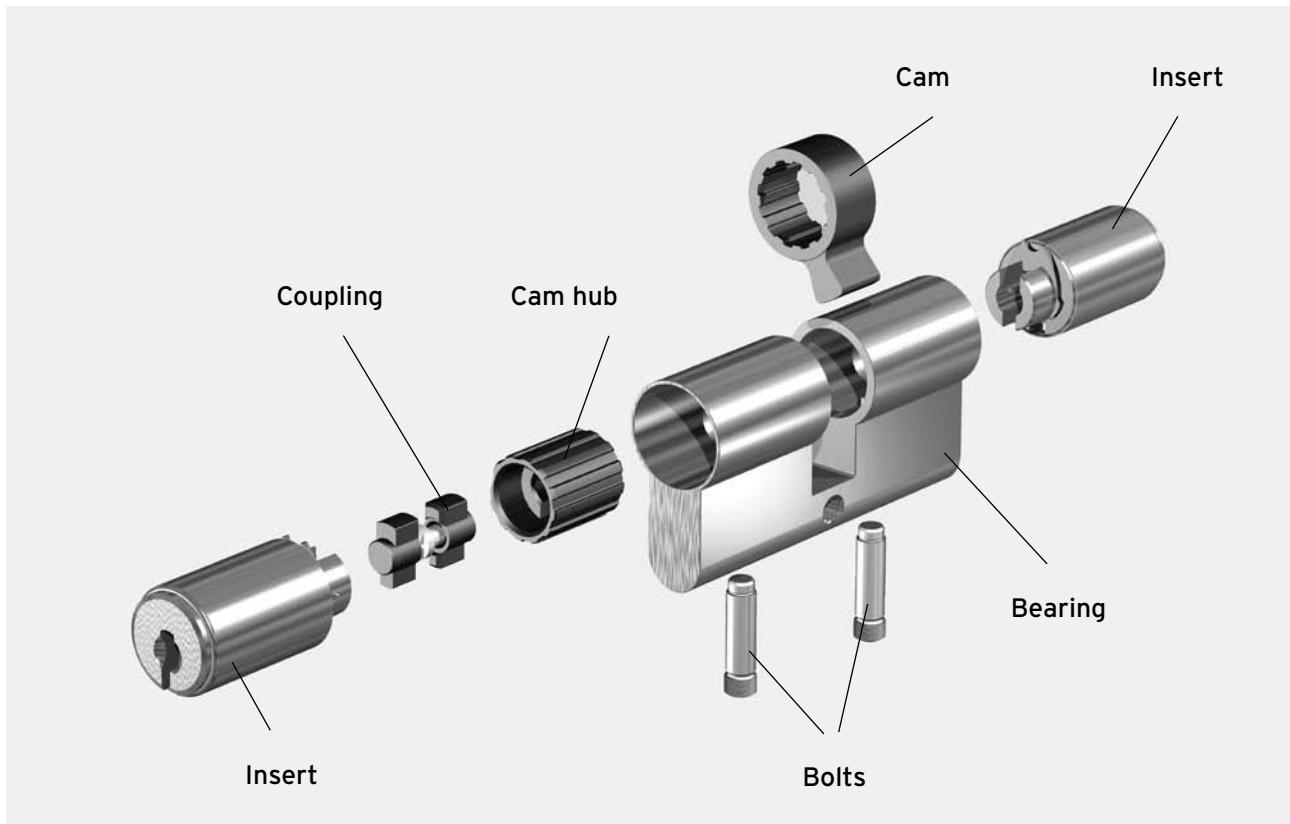
Each pin pair can be varied at several levels. The pin rows are arranged radially to the cylinder center and are not subjected to any reciprocal variation limitations.
8. Kaba master key systems have a **modular design**. In combination with various lengths of cylinder housings (complete housings), cams and couplings, cylinders previously supplied can be quickly modified with regards to the length and/or function.
The concept of modular inserts also allows the use of other cylinder types such as single cylinders, thumbturn cylinders, furniture cylinders in the modular system.
9. All tumbler pins (in the stator and rotor) are made from hardened, chemically nickel plated steel to achieve **increased drilling protection**. In addition, the fixing area is secured with a 4 mm thick stud bolt made from hardened steel.
10. Increased protection against pulling or ripping out the lock is provided as an option with **VdS approval**. This protection can withstand a force of at least 15 kN for both the cylinder plugs and the cylinder body.
11. As an option, Kaba cylinders in master key systems can also be equipped with a **steel housing and additional special carbide fastening pins** to provide increased protection against drilling, pulling and tearing.

12. Double cylinders can be supplied optionally as short cylinders with full master key system functionality (basic length 25/35 mm).
13. The system can be used with Euro profile double cylinders with
 - a) **Priority function**
(the cylinder can also be locked from the outside when a key is inserted in the inside)
 - b) **Emergency override key function**
(locking out one side is overcome by using an emergency override key)
Note: Standard for double cylinders in Europrofile, the emergency override key must be ordered separately.
 - c) **Cam with 360° freewheel function**
14. The following can also be integrated into the system:
 - a) **Cam locks** with an installation diameter of 19 mm
 - b) **Switch/Elevator cylinders** (round cylinders) with an installation diameter of 19 mm
 - c) **Furniture cylinders** with an installation diameter of 22 mm
 - d) **Padlocks**
15. Euro profile cylinders are supplied standard with a 2x12 adjustable cam (in 15° increments).
16. If required, mortise lock cylinders in "**Swiss Profile**" (22 mm) for special doors (main entrances, etc.) can be integrated into master key systems with Euro profile cylinders while maintaining all lock functions.
17. Kaba systems can optionally be equipped with a **Duplo function** (the regular key can only be turned so far so that only the lock latch can be activated).
18. The mechanical master key system can also be upgraded with an electronic master key system. The Kaba reversible key can be upgraded with a Legic® transponder without having to change the existing mechanical master key system. Such keys may be used in mechanical, mechatronic and electronic master key systems.

Mechatronic systems, consoles for access control and time attendance can also be integrated into the master key system. We also provide suitable software for access control and time attendance.

19. We also offer an optional master key system management program.

Kaba Modular



Investment security and upward compatibility - in short, long term use and usability of products once purchased have always been an important issue for - and an substantial differentiating characteristic of Kaba.

Kaba reversible key systems Kaba penta, Kaba quattro pluS, Kaba quattro S, Kaba gemini S, Kaba experT and Kaba gemini T have a module system design that makes it quick and easy to modify cylinder lengths and types.

Existing cylinders can be modified quickly and easily regarding length and/or function in combination with different cylinder bodies (complete housings), couplings and cam hubs. The locking system itself cannot be modified by the dealer. A general 2x12 conversion of the cam is possible.

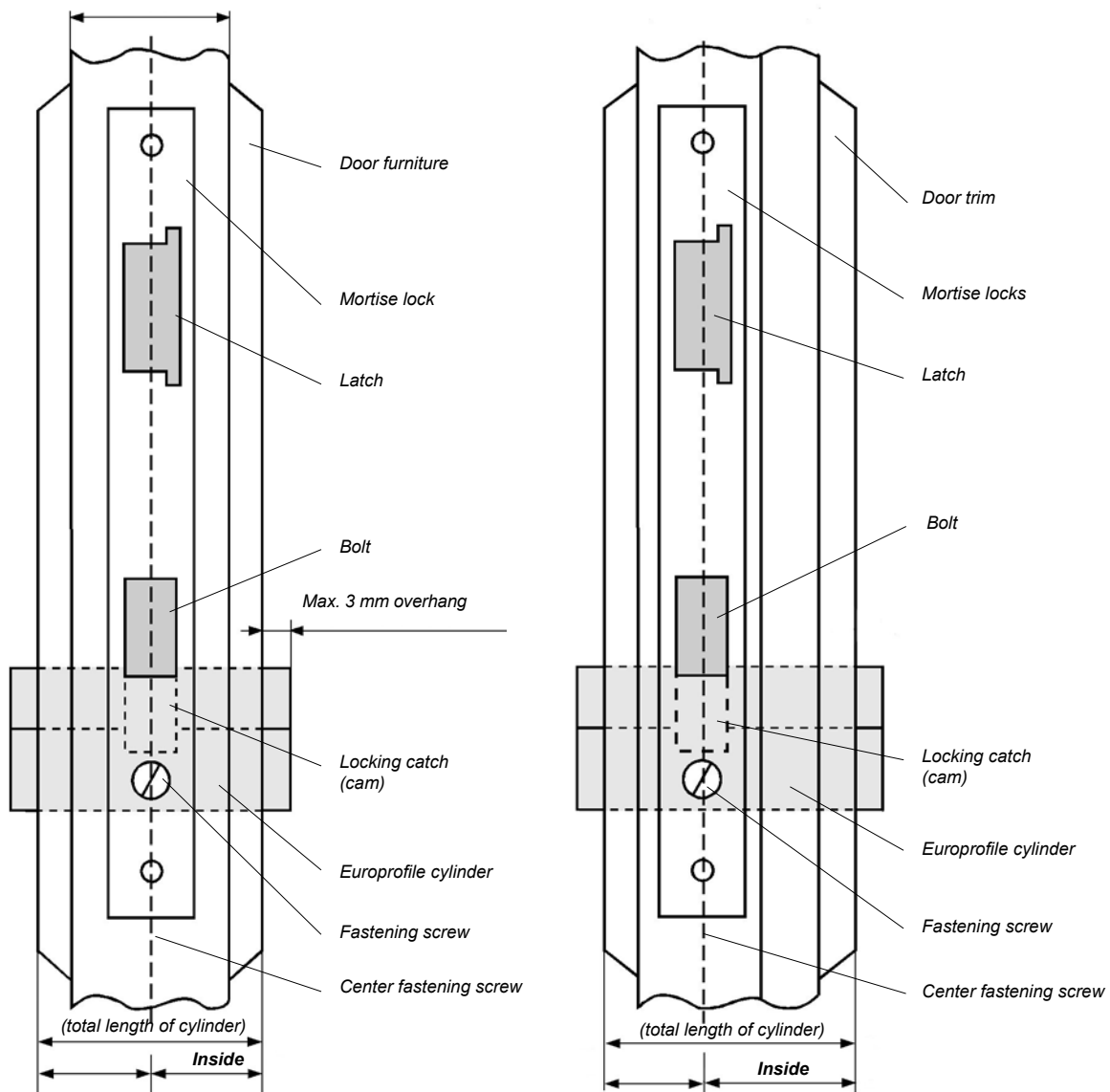
The module insert concept allows the inserts to be used trouble-free in other cylinder types (single cylinders, thumbturn cylinders, rim cylinders, furniture cylinders, padlocks and cam locks).

Kaba modular expands the application area of authorized dealers, especially in the service area. A quick conversion of an existing cylinder and an adjustment to changed customer desires and requirements increases versatility and flexibility.

Specially trained and authorized modular dealers have an agreement with Kaba to carry out cylinder conversion. Kaba provides a dealer set to support these dealers (basic equipment of required cylinder parts for length changes and/or other conversions) as well as installation tools.

For more information see our Kaba Modular System Catalogue on CD-ROM.

Determining the Cylinder Length



Non-rebated door

Rebated door

When determining the required cylinder length, the thickness of the door furniture and/or rosette being used must always be added to the door leaf thickness.

The required cylinder length is determined after inserting the mortise lock:

1. Outside = distance from cylinder fastening screw to the outside (including door furniture)
2. Inside = distance from cylinder fastening screw to the inside (including door furniture)
3. Select the next larger dimension from the Kaba cylinder list.

Order Instructions

Please note the following information regarding the order codes for our products. The codes are mostly self-explanatory. All order information about a product is contained in a generic code: system, product group, dimensions, special functions, cylinder surface finish.

Special configurations for extreme operating conditions

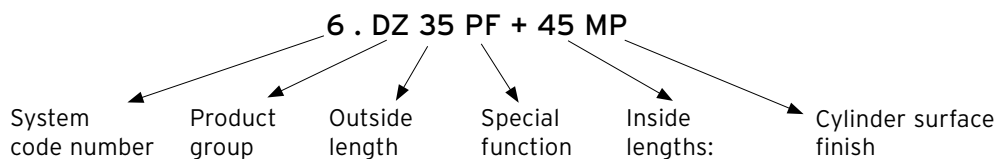
Chemical nickel plating of cylinders and keys attain a harder, more wear and corrosion resistant surface. This configuration can be used quite individually. In case of master key systems this can be a single key or cylinder that is subject to extremely frequent use

(e.g. contact switches, garages in apartment complexes, master key used by security personnel, etc.).

Order suffix: ***.NIC** at the end of an order code for a lock cylinder or a key

Order code example for a lock cylinder with two additional functions:

Double cylinder in the Kaba penta system, outside length 35mm (outside), inside length 45mm (inside), priority function on the outside, cylinder surface finish polished brass.



! The first length stated is always the outside.

System code numbers:

- | | |
|----------|------------------------------------|
| 1 | Kaba gemini (only for extensions) |
| 2 | Kaba gemini S |
| 3 | Kaba quattro (only for extensions) |
| 4 | Kaba quattro S |
| 5 | Kaba experT |
| 6 | Kaba penta |
| 7 | Kaba quattro pluS |
| 8 | Kaba 8 (only for extensions) |
| 9 | Kaba gemini T |

Product Groups: (selection)

DZ	Double Cylinder, Euro profile Ø17mm
DZCH	Double Cylinder, Swiss round profile Ø22mm
DZUN	Double Cylinder, Union profile (UK)
ODZ	Oval Double Cylinder (Scandinavia)
DKZ	(Thumb)Turn Cylinder, Euro profile
HZ	Single Cylinder, Euro profile
WC	WC cylinder
VHZ	Padlock with Cylinder
AZ	Rim Cylinder
IZ	Inside Cylinder
BMZ	Cam Lock
ZSL	Cylinder Key
EZSL	Electronic Cylinder Key
FG	Window Handle
GTS	Glass Door Lock
MZ	Furniture Cylinders
MAS	Furniture Stop Lock
MES	Furniture Espagnolette Lock
DRZ	Push Cylinder
ZVZ	Central Lock Cylinder
OL	OLives
ROS	Rosettes
AFZ	Elevator Cylinder
SZM	Switch Cylinder With switch element
SZO	Switch Cylinder Without switch element
SK	Key

Special functions:

(specified after the appropriate side)

BAZ	Construction timefunction
DF	Duplo Function
PF	Priority Function
ST	Steel cylinder - increased drilling protection
LAM	Cylinder body with steel shim insert
ZS	PullingProtection
FL.360	FreeWheel 360°
SSW	Dust and Weather Protective cap

Cylinder surface finishes:

NI	Nickel, natural
CR	Chrome, standard
CRP	Chrome, polished
CRM	Chrome, dull
MS	Brass, standard/natural
MSA	Brass, standard antique
MB	Brass, brushed
MG	Brass, varnished
MP	Brass, polished
BH	Brown, light
BM	Brown, medium
BD	Brown, dark (black)
NIC	Chemically nickel plated
GO	Gold plated

Cylinder Surface Finishes



NI
Nickel, natural



CR
Chrome, standard



BM
Brown, medium



BH
Brown, light



BD
Brown, dark



MS
Brass, natural



MP
Brass polished



NIC
Chemically nickel plated



CRP
Chrome, polished

Security Features and Standards

Kaba security cylinders offer a very high degree of security thanks to innovative construction, precise manufacturing methods, high quality raw materials and semi-finished products, and motivated and qualified employees. The standard configurations of the Kaba lock systems gemini S, experT, quattro S, quattro pluS meet the requirements of European Standard EN1303, Key Related Security Grade 6 and with the installation of security door furniture Attack Resistance Grade 2. With additional optional security elements in the the lock cylinder, Kaba lock cylinders also meet the requirements of EN3103 Attack Resistance Grade 2 without door furniture. Kaba lock cylinders are certified according to VdS Grade B for increased drilling and pulling protection, according to DIN18252 with drilling and pulling protection and according to the Dutch Standard SKG with ** and *** stars with and without pulling protection. The following table provides an overview of which cylinder configurations fulfill which standards. Certificate copies can be provided upon request.

Standard	Configuration	Order code	gemini	gemini S	gemini T	quattro	quattro S	quattro pluS	experT	penta	Hardened tumbler pins	Front hardened insert connecting screw	Back hardened insert connecting screw	Front insert connecting screws with carbide bolts + short hardened insert	Insert with BS (carbide long pins)	Pulling protection pin	Standard housing	Housing with 2 insert connecting holes (on one side)	Housing with 2 insert connecting bores and bore for pulling protection pin (on one side)	Housing with shims
			Systems							Equipment					Housing types					
Kaba configurations																				
BS1		BS1	o	o	o	o	o	o	o	o	o	o	o				o			
BS2		BS2+LAM	o	o	o	o	o	o	o	o	o	o	o	o	o					o
ZS		ZS.BS1/2	o	o	o	o	o	o	o	o	o	o	o			o	o			
Standard-specific configurations with certificate																				
Kaba	Standard		x	x	x	x	x	x	x	x	x	x	x				x			
EN 1303	AW2*			x			x	x	x	x	x		x				x			
	AW2	D.LAM		x			x	x	x	x	x	x	x							x
DIN 18252	with BS	D		x			x	x	x	x	x	x	x					x		
	with ZS	ZS.D		x			x	x	x	x	x	x	x			x			x	
VdS	A																			
	B without ZS	V					x	x	x	x	x		x	x	x			x		
	B with ZS	ZS.V					x	x	x	x	x		x	x	x	x			x	
SKG	**			x	x		x		x	x	x		x				x			
	*** without ZS	V					x		x	x	x		x	x	x			x		
	*** with ZS	ZS.V					x		x	x	x		x	x	x	x			x	

* In connection with a pulling protection fixture in the door furniture

o = Kaba Standard, x = Institutional Standard

Security Features Configurations and Order Examples

If not otherwise stated, all Kaba cylinders are supplied with

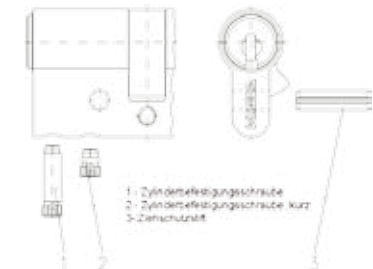
- hardened insert fastening screw(s)
- hardened tumbler pins

Order examples (all double cylinders "DZ"):

6.DZ30+30NI Kaba penta

Order code "ZS" for configuration with pulling protection pin

6.DZ30ZS+30NI Kaba penta with pulling protection on the outside



Configuration with pulling protection pin

Kaba BS1 (drilling protection 1)

For all configurations that are not supplied as per DIN:

- 2 hardened insert fastening screws

Order code "BS1," e.g.

9.DZ30+30BS1.NI Kaba gemini T with drilling protection level 1

9.DZ30ZS.BS1+30.NI Kaba gemini T with BS 1 with pulling protection pin

9.DZ30+30ST.NI Kaba gemini T with BS1 with steel housing

9.DZ30+30LAM.NI Kaba gemini T with BS1 with steel shims



3 steel shims in the housing

Configuration with steel shims

Kaba BS2 (drilling protection 2)

Equipment for all configurations that are not supplied as per VdS:

- Insert with drilling protection using carbide long pins
- 1 Insert fastening screw, long, hardened
- 1 Insert fixing screw short, hardened with 1 carbide bolt
- Housing (also ST or LAM) with 2 insert fastening bolt holes

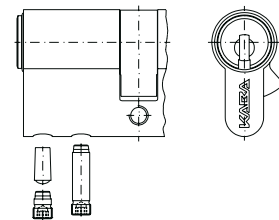
Order code "BS2," e.g.

2.DZ30BS2+30NI Kaba gemini S in BS2 configuration

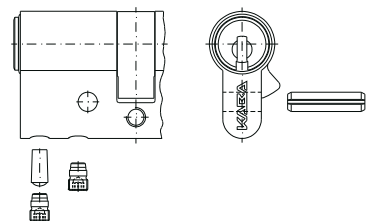
2.DZ30ZS.BS2+30NI Kaba gemini S in BS2 configuration with pulling protection pin

2.DZ30BS2+30ST.NI Kaba gemini S in BS2 configuration with steel housing

2.DZ30BS2+30LAM.NI Kaba gemini S in BS2 configuration with steel shims



Drilling protection 2 configuration



Drilling protection 2 with pulling protection pin

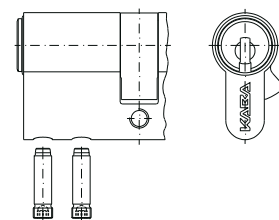
Kaba cylinders as per DIN 18252 contain:

- 2 hardened insert fastening screws

Order code "D," e.g.

6.DZ30D+30NI Kaba penta in DIN 18252 configuration

6.DZ30ZS.D+30NI Kaba penta in DIN 18252 configuration with pulling protection pin



DIN cylinder without pulling protection pin

Security Features Configurations and Order Examples



Kaba cylinders as per VdS Grade B contain

- Insert outside with drilling protection using carbide long pins
- 1 long, hardened insert fastening screw
- 1 short, hardened insert fastening screw and 1 carbide bolt
- Housing with two insert connecting holes

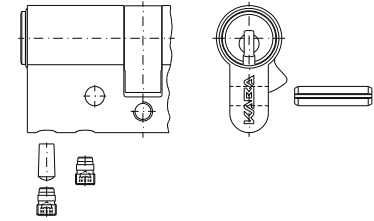
Order code "V," e.g.

6.DZ30V+30NI

Kaba penta, VdS configuration

6.DZ30ZS.V+30NI

Kaba penta, VdS configuration with pulling protection pin



VdS cylinder with pulling protection pin

Kaba cylinders as per EN1303 Attack Resistance Grade 2 contain:

- Insert outside with drilling protection using carbide long pins
- 1 long, hardened insert fastening screw
- 1 short, hardened insert fastening screw and 1 carbide bolt
- Housing with two insert fastening holes

Order code examples

6.DZ30ZS.D+30NI

Kaba penta as per EN 1303 Grade 6/2 with pulling protection pin

6.DZ30D.LAM+30NI

Kaba penta as per EN 1303 Grade 6/2 with steel shim inserts in the housing

Important Product Information for Master Key Systems

General Notes

Please note the following information about lock cylinders. Non-adherence may relieve Kaba GmbH from regress claims.

1 Product information and use according to the intended purpose

A lock cylinder is in the sense of this definition a component, that in general can be installed exchangeably in door locks, door furniture, apparatuses or doors prepared herefor or in other related product types. Other lock cylinder styles shall be handled accordingly. The proper operation of the lock cylinders is performed with its respective keys.

1.1 Lock cylinders can then be installed without reserve in locks, door furniture, apparatuses, etc. if they have been expressly arranged for the respective lock cylinder. In other cases the manufacturer, dealer, installer or user of such locks, door furniture, apparatuses etc must themselves be sure for himself that the selected lock cylinder is suitable for application. For example, in prison cells only thumbturn cylinders may be installed. Mandatory legal regulations must also be adhered to. (e.g. emergency exits, elevators).

1.2 Lock cylinders, that may be subject to force, may not protrude more than 3 mm above the door furniture. The degree of burglary resistant measures is according to the demands required (see e.g. the requirements of burglary resistant door elements according to VST/BVD).

1.3 The installation of lock cylinders must be executed in such a manner, that when the key has been properly removed from the cylinder that no external force can be transferred to the cam or in the turning direction of the locking bar.

1.4 For humid or refrigerated rooms, outside use, use in marine environments or for use environs with aggressive, corrosion agents, the lock cylinders must be specified in the appropriate special configuration. Electronic or mechatronic products may only be used in such environments in consent with the manufacturer. The same applies for lock cylinders that are heavily exposed to dust. In such cases weather protective rosettes shall be used.

1.5 Usually a double cylinder with two locking sides can not be operated if a key has been inserted into the other side of the lock cylinder. If this should be possible, select a lock cylinder with the respective function. 1.6 For correct use of the key, apply force to key only when it has been completely inserted into the keyway and has reached the stop.

1.7 Lock cylinders and keys form a functional unit. We can only hold our liability for our original products only.

1.8. Replacement keys for lock cylinders must be checked for correct function in the respective lock cylinder immediately upon receipt.

2 Misuse

Misuse - incorrect product use of lock cylinders or keys occurs when:

2.1 tools such as nails, pliers, or others are used on the key bow to increase torque.

2.2 the key is used as a lever handle to open a door. The key is not suited to use in place door furniture (knob, lever handle, rigid handle etc.)

2.3 the lock cylinder is operated with falsified, bent, damaged or badly worn key.

2.4 it has been attempted to unlock the cylinder with picking tools, other objects or unauthorized duplicate keys

2.5 if foreign are objects are found in the keyway or on the key or if the maintenance guidelines have not been followed.

3. Product performance as far as the performance has not been specified in our catalogues, brochures and technical descriptions, must be specified for the individual lock cylinders and approved by Kaba. The life cycle (security and function) of a lock cylinder is about 10-15 years, depending on the application frequency of use. The cylinder are tested to 50,000 locking cycles minimum. The corresponds to about 10-15 locking cycles per day for the duration of 15 years. It is however possible that a lock cylinder can become defective after a short period of time if it is not operated and maintained properly. Lock cylinders and keys must be replaced, especially if the key cannot be freely inserted and retracted, in spite of correct maintenance. Batteries used in Kaba products are subject to the specification of the respective manufacturer. No guarantee can be provided for such products.

4 Preventive maintenance of lock cylinders should be carried out once a year - depending on usage also more often - using our recommended cleaning agent. Principally lock cylinders may never be treated with resinated substances (e.g. oil). Cleaning agents may only be used that contain no corrosion causing ingredients.

5 Information and instructions about the fulfillment of the information and instruction obligations and services are available for licensees, locksmiths, architects, planners, advisory institutions, contractors or users: Catalogues, brochures, master key plans, instructions for installation, operation and maintenance, factory advise and training for a selection of lock cylinders as well as for installation, operation and maintenance:

5.1 for architects, planners and advisory institutions, all required production information must be requested from us and adhered to.

5.1 for licensees, product information shall be followed and especially all required instructions must be requested from us and be passed on to contractors and users.

5.3 for contractors all product information shall be followed and especially the operation and maintenance manuals shall be requested from us and forwarded to the contracting body and users.

We reserve the right to change or supplement this information at any time.

Subject to change