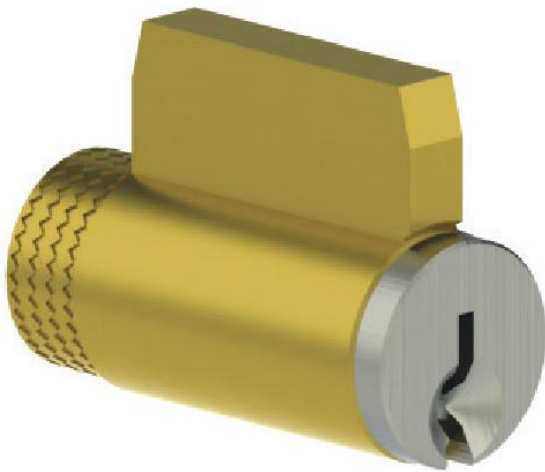


# Cylinder, Core & Keying





## CYLINDER, CORE & KEYING - CONVENTIONAL CYLINDERS

### Keying Options

Keyed function locks are supplied standard with Schlage 'C' keyway cylinder, cylinder drilled 6-pin, keyed 5-pin and will be keyed different with two operating keys unless otherwise specified.

- Keyed Alike, 0 Bitted, 1 Bitted
- Master Keyed [must specify quantity of Master keys where applicable, 3961 (5-pin) or 3962 (6-pin)]
- Construction Master Keyed (Schlage C, E & F)
- Keyed to Specific or Existing Number
- Submit master keying form; pages 88-91 or at [www.hagerco.com](http://www.hagerco.com)
- Extra Cut Keys (3961 - Cut 5-pin, 3962 - Cut 6-pin)
- Key Markings: 1AA, 2AA etc. (per key)
- Key Markings other than Key Set (per key)
- Cylinder markings
- Bitting Lists are available, ordered separately from Master Keyed order; specify 3998
- All optional keyways below may not be immediately available. Contact customer service for more information on a particular keyway.

### Optional Keyways (Conventional Cylinders)



**Arrow AR1**



**Corbin 60**



**Corbin 77**



**Corbin/  
Russwin L4**



**Kwikset KW1**



**Weiser E**



**Russwin D1**



**Sargent LA**



**Schlage E**



**Schlage F**



**Yale E1R  
(PARA)**



**Yale GA**

### Keys



**3955  
Key Blank**  
5-pin, C keyway



**3961  
Cut Key**  
5-pin, keyed to specific or existing number



**3956  
Key Blank**  
6-pin, C keyway



**3962  
Cut Key**  
6-pin, keyed to specific or existing number





## CYLINDER, CORE & KEYING - CONVENTIONAL CYLINDERS

### Cylinders



#### 3960

##### Key-in Lever/Deadlock Cylinder

Includes two operating keys  
Specify keyway, tailpiece, and how keyed  
Note: Cylinder instructions and ordering guide available on [www.hagerco.com](http://www.hagerco.com)



#### 2-639-7008

##### Tailpiece 9

Pack of 10 tailpieces for use with 3653L, 3670L and 3680L



#### 2-639-7018

##### Tailpiece W

Pack of 10 tailpieces for use with 3473L

### Tailpieces



#### 2-639-7000

##### Tailpiece 1

Pack of 10 tailpieces for use with 3453L, 3450L, 3480L, 2580L



#### 2-639-7001

##### Tailpiece 2

Pack of 10 tailpieces for use with 3470L



#### 2-639-7002

##### Tailpiece 3

Pack of 10 tailpieces for use with 3453K, 3480K, 3550L, 3553L, 3553K, 3579L, 3580L, 3580K, 3753L, 2550L, 2553L



#### 2-639-7087

##### Tailpiece Z

Pack of 10 tailpieces for use with 3570L and 3573L



#### 2-639-7094

##### Tailpiece X

Pack of 10 tailpieces for use with 3495L



#### 2-639-7192

##### Tailpiece K

Pack of 10 tailpieces for use with 4700 key-in-lever trim (KE, KN)



#### 2-639-7003

##### Tailpiece 4

Pack of 10 tailpieces for use with 3470K, 3570K



#### 2-639-7322

##### Tailpiece V

Pack of 10 tailpieces for use with 2570L



#### 2-639-7005

##### Tailpiece 6

Pack of 10 tailpieces for use with 3114DB and 3214DB exterior cylinders



#### 2-639-7006

##### Tailpiece 7

Pack of 10 tailpieces for use with 3114DB and 3214DB interior cylinders



#### 2-639-7007

##### Tailpiece 8

Pack of 10 tailpieces for use with 3115DB, 3118DB, 3215DB, 3710DB, 3753DB

### Rim Cylinder Housing



#### 3901

##### Rim Cylinder

- Conventional cylinder supplied drilled 6-pin, keyed 5-pin standard
- Furnished with trim ring, mounting plate, and break off screws
- Long tail piece standard
- Supplied with two operating keys



#### 3903

##### Rim Dummy Cylinder



## CYLINDER, CORE & KEYING - CONVENTIONAL CYLINDERS

### Rim Cylinder Accessories



**2-639-7058**  
**Long Breakoff Tailpiece**  
2-3/8" (60 mm)



**2-300-0118**  
**Extra Long Breakoff Screws**  
2-3/8" (60 mm)



**2-649-0137**  
**Retaining Cup**  
Can be used with 45PN, 47PN, and 47RN

### Mortise Cylinder Housing



**3902**  
**Mortise Cylinder**

- Conventional cylinder supplied drilled 6-pin, keyed 5-pin standard
- 3975 standard cam attached and 3972 Adams Rite cam shipped loose in the box
- Thread size is 1.150" x 32 UNS
- Cylinder face diameter is 1.360"
- Supplied with two operating keys
- 1-1/8" (29 mm) standard length, 1-1/4" (31 mm), and 1-5/8" (41 mm) for mortise exit devices
- Other lengths may be available with extended lead time
- **Must specify length, cam, keyway, and keying requirements**



**3904**  
**Mortise Dummy**

- 1-1/8" (29 mm) length
- 1-1/4" (31 mm) length



**3905**  
**Mortise ADA Turn Knob**

- 1-1/8" (29 mm) length
- 1-1/4" (31 mm) length

Note: Ships with Schlage "L" Cam; specify if different

### Mortise Cylinder Cams



**3971**  
**Yale Cam**  
Radius .722" (18 mm)



**3972**  
**Adams Rite Cam**  
Radius .560 (14 mm)



**3973**  
**Standard Cloverleaf**  
Radius .741" (19 mm)



**3974**  
**Marks Cam**  
Radius .755" (19 mm)



**3975**  
**Standard Cam**  
Radius .723" (18 mm)  
For use with Hager exit devices and trim



**3976**  
**Schlage L Cam**  
Radius .637" (16 mm)  
For use with Hager mortise locks (all functions)



**3977**  
**Sargent/Yale Cam**  
Radius .733" (18.6 mm)



**3978**  
**Corbin/Russwin/Best Cloverleaf**  
Radius .725" (18.5 mm)





## CYLINDER, CORE & KEYING - SMALL FORMAT INTERCHANGEABLE CORE

### Keying Options

Cores are furnished keyed different unless otherwise specified. Other keying options include:

- Keyed Alike
- Construction Cores
- Master keyed (Must specify quantity of master keys, control keys, or additional change keys, 3984.)
- Keyed to specific or existing number
- Key Markings: 1AA, 2AA etc. (per key) - VKC
- Key markings other than key set
- Core markings (Visual or concealed)
- Do not duplicate
- Bitting Lists are available, ordered separately from Master Keyed order, specify 3998

\* Construction master keyed not available.

### SFIC Keyways (Best) - A, B, C, D, E, F, G, H, J, K, L, M, Q

#### SFIC Cores



**3981-C**  
**Combinated Core 6-Pin**  
Includes two change keys  
Finishes include US4 or US26D

**3981-U**  
**Uncombinated Core 6-Pin**  
Includes two key blanks  
Finishes include US4 or US26D



**3982-C**  
**Combinated Core 7-Pin**  
Includes two change keys  
Finishes include US4 or US26D

**3982-U**  
**Uncombinated Core 7-Pin**  
Includes two key blanks  
Finishes include US4 or US26D

#### SFIC Keys



**3983**  
**SFIC Key Blank**  
Best Keyways used with 6-pin and 7-pin cores



**3984**  
**SFIC Cut Key**  
Best Keyways used with 6-pin and 7-pin cores

### SFIC Construction Cores

Construction Small Format Interchangeable Cores are available in blue or red and are keyed alike. Will receive full credit, less shipping, of original cost upon return of construction cores with keys.



**3981-Blue or 3981-Red**  
**Construction Core**  
Combinated, 6-pin  
Includes two operating keys



**3982-Blue or 3982-Red**  
**Construction Core**  
Combinated, 7-pin  
Includes two operating keys

### SFIC Construction Core Keys



**2-639-7168**  
**3984 Control Key (BA IC 6 Blue)**

**2-639-7169**  
**3984 Control Key (BA IC 7 Blue)**

**2-639-7170**  
**3984 Control Key (BA IC 7 Red)**

**2-639-7113**  
**3984 Control Key (BA IC 6 Red)**

Note: Two (2) control keys will be shipped with an order unless otherwise specified.





**HAGER**  
COMPANIES

## CYLINDER, CORE & KEYING - SMALL FORMAT INTERCHANGEABLE CORE

### SFIC Tailpieces



#### 2-639-7060

Pack of 10 tailpieces for use with 2500/3500 Series SFIC lever (6-pin/7-pin combo)



#### 2-639-7061

Pack of 10 tailpieces for use with 3400/3500 Series SFIC knob (6-pin/7-pin combo)



#### 2-639-7090

Pack of 10 tailpieces for use with 3753 Interconnected Lock SFIC lever (6-pin/7-pin combo)



#### 2-639-7091

Pack of 10 tailpieces for use with 3114/3214 SFIC deadbolt (6-pin/7-pin combo)



#### 2-639-7095

Pack of 10 tailpieces for use with 3115/3118/3215 and 3710/3753 SFIC deadbolt (6-pin/7-pin combo)

### SFIC Rim Cylinder Housing



#### 3901 Rim Cylinder

- Furnished with trim ring, mounting plate, and break off screws
- Long tail piece standard
- Small Format Interchangeable Core housing supplied less core
- Specify 6- or 7-pin

### SFIC Rim Cylinder Accessories



#### 2-639-7058

**Long Breakoff Tailpiece**  
2-3/8" (60 mm)



#### 2-300-0118

**Extra Long Breakoff Screws**  
2-3/8" (60 mm)



#### 2-649-0137 Retaining Cup

Can be used with 45PN, 47PN, and 47RN

### SFIC Mortise Cylinder Housing



#### 3902

##### Mortise Cylinder

- 2-639-7082 standard cam;
- 2-639-7083 Adams Rite cam shipped loose in the box
- Thread size is 1.150" x 32 UNS. Cylinder face diameter is 1.360"
- Small Format Interchangeable Core housing supplied less core
- **Must specify length and cam, 6-pin 1-1/4", 7-pin 1-3/8", 7-pin 1-5/8" (for mortise exit device)**

### SFIC Mortise Cylinder Cams



#### 2-639-7082

**Standard Yale Cam**



#### 2-639-7083

**Adams Rite Cam**



#### 2-639-7084

**Standard Cloverleaf Cam**



#### 2-639-7085

**Schlage "L" Cam**

For use with Hager mortise locks (all functions)



#### 2-639-7086

**Sargent/Yale Cam**





## CYLINDER, CORE & KEYING - LARGE FORMAT INTERCHANGEABLE CORE

### Keying Options

Cores are furnished zero bitted - unless otherwise specified. Other keying options include:

- Keyed alike
- Keyed different
- Master keyed (must specify quantity of master keys, control keys or additional change keys)
- Construction master keyed
- Keyed to specific or existing number
- Key Markings: 1AA, 2AA etc. (per key) - VKC
- Key markings other than key set
- Core markings (visual or concealed)
- Bitting Lists are available, ordered separately from master keyed order, specify 3998

### LFIC Cores (Available in Schlage C Only)



#### 3919

##### Zero Bitted Core 6-Pin

Includes two key blanks  
Finishes include US4 or US26D

##### Combinated Core 6-Pin

Includes two change keys  
Finishes include US4 or US26D

### LFIC Tailpieces



#### 2-639-7645

50, 53 and 80 functions only



#### 2-639-7646

70 function only



#### 2-639-7647

73 and 95 functions only

### LFIC Keys



#### 3956

##### Key Blank

Schlage C Keyway, 6-pin only



#### 3962

##### Cut Key

Schlage C Keyway, 6-pin only



#### 3963

##### 3919 Control Cut Key



#### 2-639-7649

##### 3919 Control Key Blank

### LFIC Rim Cylinder Housing



#### 3901

##### Rim Cylinder

- Furnished with trim ring, mounting plate, and break off screws
- Tail piece supplied standard
- Large Format Interchangeable Core housing supplied less core.
- 6-pin only

### LFIC Rim Cylinder Accessories



#### 2-639-7578

##### Breakoff Tailpiece Assy

2-3/8" (60 mm)



#### 2-300-0175

##### Breakoff Screws

2-1/8" (54 mm)





**HAGER**  
COMPANIES

## CYLINDER, CORE & KEYING - LARGE FORMAT INTERCHANGEABLE CORE

### LFIC Mortise Cylinder Housing



#### **3902**

##### **Mortise Cylinder**

- 2-639-7082 standard cam;  
2-639-7083 Adams Rite Cam shipped loose in the box.
- Thread size is 1.150" x 32 UNS.  
Cylinder face diameter is 1.360".
- Large Format Interchangeable  
Core housing supplied less core
- **Must specify cam, 1-1/2" length**

### LFIC Mortise Cylinder Cams



#### **2-639-7570** **Standard Yale Cam**



#### **2-639-7571** **Adams Rite Cam**



#### **2-639-7572** **Schlage "L" Cam** For use with Hager mortise locks (all functions)



#### **2-639-7573** **Corbin Cam**



#### **2-639-7574** **Sargent/Yale Cam**





## CYLINDER, CORE & KEYING - CONVENTIONAL CYLINDERS - HAGER KEYWAY - (7-PIN ONLY)

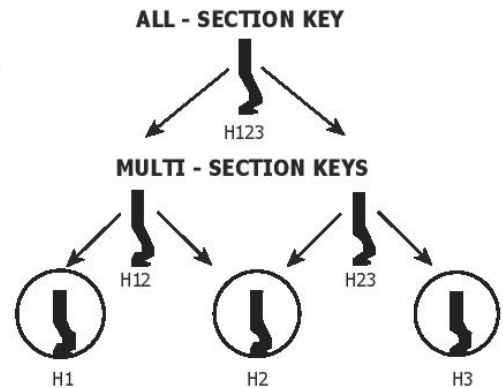
### Keying Options

Keyed function locks are supplied keyed different unless otherwise specified.

- Keyed alike, 0 bitted, 1 bitted
- Master keyed (must specify quantity of Master keys where applicable)
- Construction master keyed
- Keyed to specific or existing number
- Submit master keying form (page 86)
- Extra cut keys (3908 - Cut 7-pin)
- Key markings: 1AA, 2AA etc. (per key)
- Key markings other than key set (per key)
- Cylinder markings (visual or concealed)
- Do not duplicate standard
- Bitting lists are available, ordered separately from Master keyed order, specify 3998

Notes: • Keys are cut bow to tip

- Must purchase capping block/press and key punch due to 140 pin spacing



### Hager Keyway (Conventional Cylinders)



**Hager H1**



**Hager H2**



**Hager H3**

### Cylinders



#### 3906

##### Key-in Lever/ Deadlock Cylinder

- 140 Pin spacing
  - Includes two operating keys
  - Specify Hager keyway, tailpiece, and keying requirements
- Note: Cylinder instructions and ordering guide available online.

### Rim Cylinders



#### 3901

##### Rim Cylinder

- 140 Pin spacing
- Conventional cylinder supplied 7-pin only
- Furnished with trim ring, mounting plate, and break off screws
- Long tail piece standard
- Supplied with two operating keys

### Mortise Cylinders



#### 3902

##### Mortise Cylinder

- 140 Pin spacing
- Conventional cylinder supplied 7-pin only
- 3975 standard cam attached and 3972 Adams Rite cam shipped loose in the box
- Thread size is 1.150" x 32 UNS
- Cylinder face diameter is 1.360"
- Supplied with two operating keys
- 1-1/8" (29 mm) standard length, 1-1/4" (31 mm) available, 1-5/8" (41 mm) for mortise exit devices
- **Must specify length, cam, keyway, and keying requirements**

### Keys



#### 3907

##### Key Blank

Hager keyways (H1, H2, H3, H12, H23, H123)



#### 3908

##### Cut Key

- Hager keyways (H1, H2, H3, H12, H23, H123)
- Specify keying required (masterkey, construction masterkey, control key)



## CYLINDER, CORE & KEYING - SFIC - HAGER KEYWAY - (7-PIN ONLY)

### Keying Options

Cores are furnished keyed different unless otherwise specified. Other keying options include:

- Keyed alike
- Master keyed (must specify quantity of master keys, control keys or additional change keys)
- Keyed to specific or existing number
- Key markings: 1AA, 2AA etc. (per key) - VKC
- Key markings other than key set
- Core markings (visual or concealed)
- Do not duplicate standard
- Bitting lists are available, ordered separately from master keyed order, specify 3998
- \* Construction master keyed not available.

Notes: • Keys are cut bow to tip  
• Must purchase capping block/press and key punch due to 140 pin spacing

### Keyways (Hager) - H1, H2 and H3 SFIC Cores



#### 3969

##### Combined Core 7-Pin

- Includes two change keys
- Finishes include US4 or US26D
- 140 Pin spacing



#### 3909

##### Uncombined Core 7-Pin

- Includes two key blanks
- Finishes include US4 or US26D
- 140 Pin spacing

### SFIC Rim Cylinder Housing



#### 3901

##### Rim Cylinder

- Furnished with trim ring, mounting plate, and break off screws
- Long tail piece standard
- Small Format Interchangeable Core housing supplied less core
- Specify 7-pin

### SFIC Mortise Cylinder Housing



#### 3902

##### Mortise Cylinder

- 2-639-7082 standard cam; 2-639-7083 shipped loose in the box
- Thread size is 1.150" x 32 UNS. Cylinder face diameter is 1.360".
- Small Format Interchangeable Core housing supplied less core
- **Must specify length and cam, 7-pin 1-3/8"**

### SFIC Keys



#### 3907

##### SFIC Key Blank

Hager keyways (H1, H2, H3, H12, H23, H123)



#### 3908

##### SFIC Cut Key

- Hager keyways (H1, H2, H3, H12, H23, H123)
- Specify keying required (masterkey, construction masterkey, control key)





## CYLINDER, CORE & KEYING - HAGER KEYWAY ACCESSORIES

### **2-639-7511**

#### **Pin Kit**

- Includes top pins, SFIC bottom pins, full size bottom pins and springs
- Does not include SFIC caps

### **2-639-7517**

#### **Construction Balls**

- Used for lost ball construction key
- Order in multiples of 1,000

### **2-639-7519**

#### **Retaining Pin Spring**

Sold in multiples of 100

### **2-639-7520**

#### **Individual SFIC Caps**

Sold in multiples of 500

### **2-639-7526**

#### **Retaining Pin**

Secures screw cap on KIK cylinder

### **2-639-7527**

#### **Plug Follower (KIK)**

### **2-639-7529**

#### **Decombinating Punch**

### **2-639-7530**

#### **Capping Punch**

### **2-639-7531**

#### **Decombinating Block (Punch Included)**

### **2-639-7532**

#### **Manual Capping Block (Punch Included)**

140 spacing

### **2-639-7534**

#### **Cap Saver Press**

- Recommended for field pinning uncombined SFIC cores
- 140 spacing

### **2-639-7535**

#### **Key Punch**

140 spacing

### **2-639-7536**

#### **HPC 1200 Series Code Card**

140 spacing



## CYLINDER, CORE & KEYING - PINS

### Original Manufacturer Nickel Silver Pins (Sold in multiples of 100)

Part Number	Description	Size
2-639-8188	Top Pin	#2
2-639-8189	Top Pin	#3
2-639-8190	Top Pin	#4
2-639-8191	Top Pin	#5
2-639-8192	Top Pin	#6
2-639-8193	Top Pin	#7
2-639-8194	Top Pin	#8
2-639-8195	Top Pin	#9
2-639-8196	Top Pin	#10
2-639-8197	Top Pin	#11
2-639-8198	Top Pin	#12
2-639-8199	Top Pin	#13
2-639-8200	Top Pin	#14
2-639-8201	Top Pin	#15
2-639-8202	Top Pin	#16
2-639-8203	Top Pin	#17
2-639-8204	Top Pin	#18
2-639-8205	Top Pin	#19
2-639-8210	Full Bottom	#0
2-639-8211	Full Bottom	#1
2-639-8212	Full Bottom	#2
2-639-8213	Full Bottom	#3
2-639-8214	Full Bottom	#4
2-639-8215	Full Bottom	#5
2-639-8216	Full Bottom	#6
2-639-8217	Full Bottom	#7
2-639-8218	Full Bottom	#8
2-639-8219	Full Bottom	#9
2-639-8220	SFIC Bottom	#0
2-639-8221	SFIC Bottom	#1
2-639-8222	SFIC Bottom	#2
2-639-8223	SFIC Bottom	#3
2-639-8224	SFIC Bottom	#4
2-639-8225	SFIC Bottom	#5
2-639-8226	SFIC Bottom	#6
2-639-8227	SFIC Bottom	#7
2-639-8228	SFIC Bottom	#8
2-639-8229	SFIC Bottom	#9



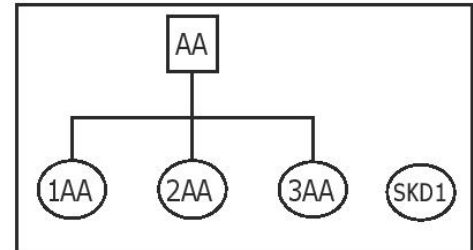


## CYLINDER, CORE & KEYING - HOW TO ORDER KEY SYSTEMS

### 2 LEVEL SYSTEMS

#### Simple Master Key System

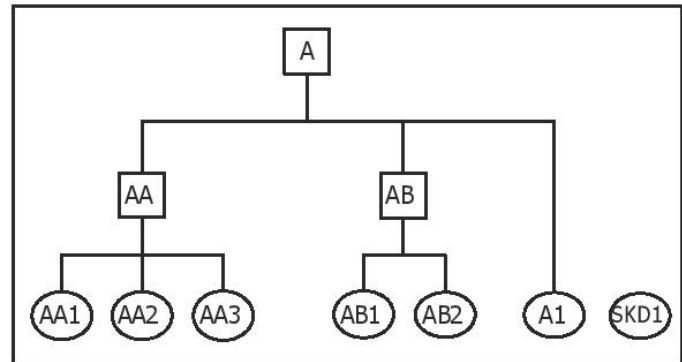
The master key symbol consists to TWO letters, **AA**. The change key numbers are added to the master key letters. The numbers come FIRST for a simple master key system, example: **1AA, 2AA, 3AA, etc.**



### 3 LEVEL SYSTEMS

#### Grand Master Key System

The grand master keyset symbol is assigned ONE letter, starting with **A**. The master keyset symbols under this grand are assigned TWO letters, the first of which will be the same as the grand; **AA, AB, AC, etc.** are all masters under the grand **A**. (Caution: **Do not use the letters, I, O, Q or X** because of the possible confusion with the numbers 1 & O. X is reserved for identifying cross keying.) Change key numbers come **AFTER** the letters, example: **AA1, AA2, AA3, etc.**



For master keyset symbols beyond AZ, insert a number between the letters to designate which pass through the alphabet they represent. **A2A** through **A2Z** represent the second pass through the alphabet of masters under the Grand **A**. **A3A** through **A3Z** would be the third pass through the alphabet. Change keys under these masters have the numbers suffixed in the usual way **A2A1, A2A2, A2A3, etc.**

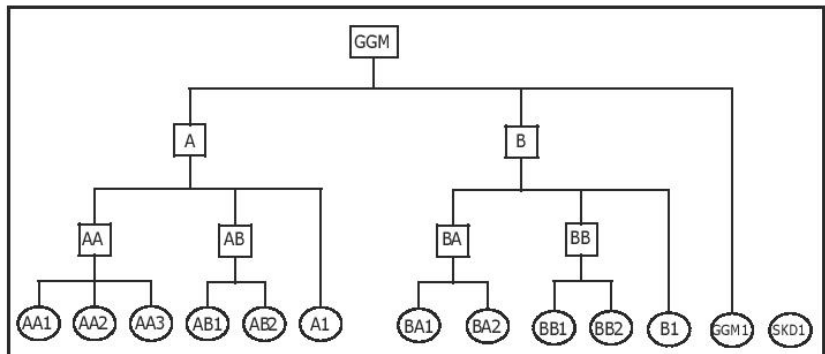
If a cylinder is to be operated by its change key and the GMK only (No master), the change number is added to the GMK symbol. This is illustrated by the keyset symbol **A1** in the schematic shown.

### 4 LEVEL SYSTEMS

#### Great Grand Master Key System

The great grand master is assigned the keyset symbol **GGM**. The rest of the symbols are the same as those in a 3 level system.

The grand master keys under the GGM are assigned the keyset symbol of single letters of the alphabet **A, B, C, D, etc.**, starting with **A**. The master keyset symbols under this grand are assigned TWO letters, the first of which will be the same as the grand; **AA, AB, ..., BA, BB, ..., CA, CB, ..., etc.** (Caution: **Do not use the letters, I, O, Q or X** because of the possible confusion with the numbers 1 & O. X is reserved for identifying cross keying.) Change key numbers come **AFTER** the letters, example: **AA1, AA2, AA3, etc.**



For masters beyond AZ, insert a number between the letters to designate which pass through the alphabet they represent. **A2A** through **A2Z** represent the second pass through the alphabet of masters under the Grand **A**. **A3A** through **A3Z** would be the third pass through the alphabet. Change keys under these masters have the numbers suffixed in the usual way **A2A1, A2A2, A2A3, etc.**

If a cylinder is to be operated by its change key and the GGM only (No grandmaster, no master), the change number is added to the GGM keyset symbol. This is illustrated by the keyset symbol **GGM1** in the schematic shown.



## CYLINDER, CORE & KEYING - HOW TO ORDER KEY SYSTEMS

### SINGLE KEYED DIFFERENT (SKD) (Example: Narcotics Room, Pharmacies)

When requirements are such that no other key operates the cylinder (master, other change keys, etc.) they are referred to as "single keyed different" and given the keyset symbol **SKD**. When more than one SKD is required in a facility, they are numbered **SKD1, SKD2, SKD3, etc.**

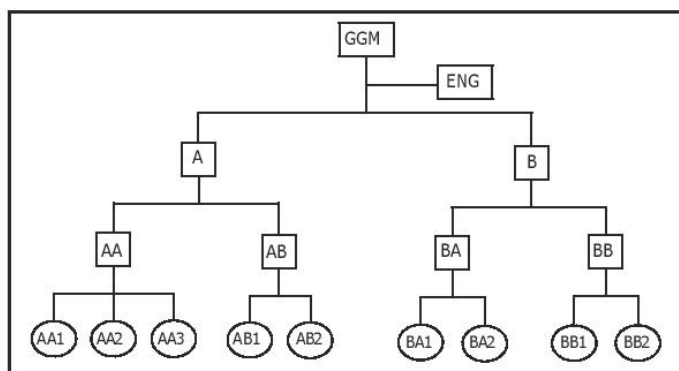
### NO MASTER KEY (NMK)

When keying requirements are such that all higher levels of master keys do not operate the cylinder, the suffix **(NMK)** is added to the keyset symbol. For example, **AA1 (NMK)** is operated by the change key **AA1** only. Neither the A grand, nor the **AA** master operate the cylinder. A keyset symbol, **AA (NMK)** indicates the cylinder to be operated by the **AA** master only, the **A** grand does not operate the cylinder.

### SELECTIVE MASTER KEYS

It is often useful in large keying systems to issue a high level master key to maintenance personnel which allows access across all master and grand master key boundaries of a keying system.

To designate that a lock be operated by a selective master key, suffix the symbol in parentheses to the standard symbol. Example: **AA1 (ENG)**. This must be added every time the selective key is to operate and left off whenever the selective key is NOT to operate. For instance, you may lay out a system in which key **AA1** is to operate two different offices. Inside one of them is an electrical cabinet which must be accessible to maintenance personnel carrying the **ENG** key. That lock must be specified as **AA1 (ENG)**, while the lock for the other office must be specified as **AA1**.



Selective master key is a convenience feature which decreases the security of the cylinders it operates and limits the expansion and flexibility of the overall keying system. Each selective master key typically eliminates 20-25% of the capacity of the system where it is used, so it should only be specified when absolutely required. It is recommended that no more than one system-wide selective master key be used within the same system.

### CROSS KEYING

Like selective master keying, cross keying is a convenience feature and will limit the expansion and flexibility of the overall key system. Whenever two or more different change keys such as **AA1 and AA2** are both required to operate the same cylinder, the cylinder's security is reduced. This is called cross keying. When the cross keying occurs under all the same higher levels (MK, GMK, GGMK), such as **AA1 and AA2**, it is known as controlled cross keying. When you combine keys under different higher levels (MK, GMK, GGMK), such as **AA1 and AB1**, it is known as uncontrolled cross keying, which you NEVER want to do.

Convenience may reduce cylinder security and hinder the overall key system expansion. Cross keying usually imposes limits on the flexibility and expansion of the overall keying system. This is especially true of uncontrolled cross keying. For these reasons, it is strongly recommended to allow personnel to carry more than one key. Cross keying should be discouraged whenever possible. However, when cross keying is required, it is specified as follows, and should be summarized at the beginning of each order. It cannot normally be added later. Each cross keyed set should also be limited to keys which are all under the same higher level master keys. Prefix the keyset symbol with the letter **X** (example: **XAA3**) All keys which are to operate the cylinder are to be listed following the keyset symbol with the phrase "to be operated by" ("TBOB", "OB", "operated by" are also common phrases/abbreviations used. Example: **XAA3**, operated by **AA1, AA2, AA**, and **A**. Note that **X** is a cylinder designation only. The change keyset would be **AA3**.

**NOTE: HAGER WILL NOT DO UNCONTROLLED CROSS KEYING DUE TO THE REDUCED SECURITY IT CAUSES.**





## CYLINDER, CORE & KEYING - HOW TO ORDER KEY SYSTEMS

### CONSTRUCTION MASTER KEYING

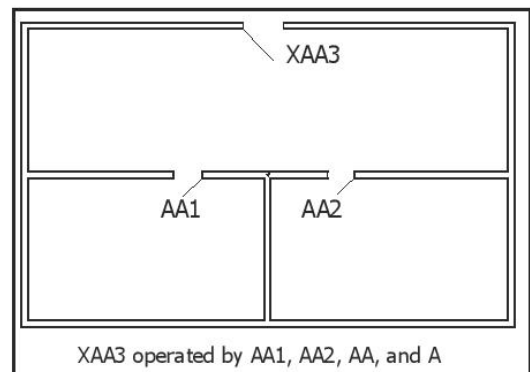
Hager uses the lost ball method for construction keying for conventional cylinders. If you have ordered Small Format Interchangeable Core (SFIC), you will be able to order temporary cores (Blue & Red are stock). Permanent cores will be shipped with permanent keys.

#### Recommendation:

Use as many keyed alike groups to conserve bitting combinations. Study blueprints and/or master plans for campuses to identify areas where more than one door leads into the same space, and where several different areas are used by the same personnel. These areas should be keyed alike (use the same keyset symbol). This conserves key bitting combinations for future use as well as reduces the need to issue master keys. Remember, key system are much like a rubber band, it only stretches so far. You can stretch it horizontally to create more master keys, or vertically to create more changes under each master, but there is a finite number of combinations available.

#### Case #1 (Cross Keying)

Cylinder requires its own change key. The illustration depicts part of a small medical building where two doctors share a common receptionist. The receptionist gets the **AA3** change key. Each doctor carries a key which operates only one office, but also operates the entrance from the corridor, by cross keying that cylinder to include the following keys to operates it. **XAA3, TBOB** (To Be Operated By) **AA1, AA2, AA and A**.



#### Case #2

The hall door cylinder does not require its own change key. This illustration depicts a section of a floor in a dormitory. Each student's bedroom change key operates the hall door cylinder. There is no need to construct a change key which operates only the hall door.

In this case, place an **X** at both the beginning and the end of the keyset symbol and a number between them. Example: **X1X, X2X, etc.** Again, always include the "TBOB" (to be operated by) phrase with a complete listing of the keyset symbols to operate the cylinder:

