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LT-922088 REV C



Medeco³
Technical Service Manual

ASSA ABLOY, the global leader in door opening solutions

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Thank you for taking the time to learn about Medeco High Security Locks. We hope this manual will help you become more proficient at servicing the new Medeco^3 technology design products. We welcome your suggestions and technical questions. Please feel free to give us a call at 1-800-548-8472 if you have a question with any of our products. Thank you.

Medeco Technical Services

How to use the Medeco Technical Manual

The Medeco^3 Technical Manual is a guide to help you service and maintain Medeco^3 cylinders. Using this manual can help you quickly and easily identify and answer a majority of your questions regarding the serving of Medeco^3 cylinders.

The Medeco Technical Manual can be used for the following purposes:

- **Quick Reference Guide**– The Medeco^3 Technical Manual can help you quickly answer questions regarding the servicing and specification of the new Medeco^3 design.
- **Training Employees** – This manual can be used as a training tool for newcomers to your facility or shop. This manual will give them the necessary information needed to service and maintain the cylinders or cores in your facility or for your customers
- **Study Material for the ALOA PRP Electives "High Security Cylinders Servicing"–** For members of the industry interested in obtaining a certification through the Associated Locksmith of America's PRP program, this guide can be a useful tool in studying and passing the "High Security Cylinder Servicing" PRP elective categories

Factory Certification Classes

Please keep in mind that although this is a technical manual on Medeco^3 cylinder servicing, it is not a substitute for a hands on Factory Certification Class. It is highly recommended that you attend a Factory Certification Class to fully grasp and understand the features and benefits of Medeco. A Factory Certification Class will also give you the hands on experience needed to become proficient at servicing Medeco^3 products. For information on where Factory Certification Classes are being held, please contact your Medeco Territory Manager, the Medeco factory at 1-800-548-8472, or our web site at www.medeco.com.

Terminology Relating to Medeco^3 Products and Cylinders

Below is a list of terms used throughout the Medeco product line:

- **Aft –** used to describe one of two types of Biaxial pins and cut positions. Pins that have chisel points positioned after the centerline of the pin. Also used to describe the cut position that lies after the centerline of the pin chamber hole.

- **Authorization Card –** Refers to the certain restricted Medeco Carded Programs. The authorization card is used as a tool to identify the authorized cardholder for a Medeco system. Only the individual carrying the authorization card is authorized to request duplicate Medeco cut keys.

- **Bitting** – the actual cut(s)(depth) and angle or combination of a key

- **Blind Code Card –** an authorization card required to obtain duplicate keys for certain restricted Medeco Key Control Programs. The blind code is a random set of numbers and letters used to reference the actual bittings located in the Medeco code book.

- **Blocking Tabs –** tabs located on the top of the slider that block the sidebar from engaging the bottom pins until the proper key is inserted.

- **Change Key Side Bitting –t**he change key side bitting is a cut made into the side of the key blade that engages the change step on the slider.

- **Change Slider –** used in all keyed different and in most master key systems. The change slider makes contact with the change side bitting on the key blade.

- **Change Step** – step located on the slider that makes contact with the change side bitting of the key

- **Control Key –** a key whose only purpose is to remove and/or install an interchangeable core. This key has a separate bitting from the operating key.

- **Distributor Faxable Restricted Key Order Form –** Refers to the faxable order form that is customized with the distributor's name and location. This form is filled out and completed by the locksmith when a request for additional Medeco cut keys is requested by an end user with an authorization card and proper identification. The faxable voucher is unique to the distributor and can only be used for Medeco cut key orders for the specific distributor. **Distributor Faxable Vouchers cannot and will not be accepted if faxed directly to the Medeco factory.**

- **Distributor Faxable Voucher –** see "Distributor Faxable Restricted Key Order Form"

- **Distributor Faxable Voucher Program –** A program offered by Medeco to authorized Medeco/KeyMark Silver Distributors to allow them to accept unique, personalized faxable vouchers from locksmiths. The unique faxable voucher is specific to the distributor and can only be used by locksmiths to order additional Medeco or KeyMark Silver cut keys through participating Medeco/KeyMark Silver Distributors who are taking advantage of the faxable voucher program.

- **Double Cuts –** two different angled cuts that utilize the fore and aft cut positions for a single pin chambers. Used to expand the size of a master key system.

- **End-User –** the end customer to which locksmiths and/or distributors sell Medeco or KeyMark locks, cylinders, and /or cut keys to for their own use.

- **False Slot on Bottom Pins –** a shallow groove or false notch cut the length of the bottom pin that travels along side of the sidebar slot. Used to increase pick resistance.

- **Fore –** used to describe one of two types of Biaxial pins and cut positions. Pins that have chisel points positioned forward of the centerline of the pin. Also used to describe the cut position that lies forward of the centerline of the pin chamber hole.

- **Graduated Driver** – a set of top pins of different lengths. Usage is based on the height of the rest of the pin stack, in order to achieve a uniform pin stack height.

- **Interchangeable Core –** a key removable core which can be used in all or most of the core manufacturer's product line. A control key is required to remove the core from its housing.

- **Key Blank** – any material manufactured to the proper size and configuration which allows its entry into the key way of a specific locking device. A key blank does not contain cuts or a combination on the top of the key blade.

- **Key Clamp –** assembly used to properly hold a key blank within the vise assembly of a key machine.

- **Key Set –** see "Key Symbol**".**

- **Key Symbol –** a designation used for a key combination in the standard key coding system, e.g., A, AA AA1, 1AA, etc.

- **Keyway Side Bitting –** Bitting placed on the side of the key blade that makes contact with the slider mechanism. The proper keyway side bittings will move the slider mechanism to an unblocking position to allow the sidebar legs to engage the bottom pins. Keyway side bitting can either be at a change level or master level.

- **Locator Tab –** a projection located at the top of the bottom pin that limits the rotation of the pin while in the pin chamber. Limits the bottom pin rotation to 45 degrees.

- **Locator Tab Slot –** a small channel along the side of the pin chamber that accepts the locator tab of the bottom pin. Limits the bottom pin rotation to 45 degrees.

- **Locksmith –** A person with the knowledge and ability to select, install, and service all components of Medeco High Security Locks. The locksmith is allowed to sell a variety of Medeco key control programs. The locksmith acts as the purchasing agent for an end-user requesting additional Medeco cut keys or products. Also referred to as a Dealer.

- **Master Key Registry Card –** an authorization card issued with a new Master Key system. The authorization card has the company name, address, authorized cardholder's name, and registry number embossed on it. The card pertains to a cylinder or group of cylinders, which are to be combinated so that all may be operated by their own change key(s) and by additional key(s) known as master key(s).

- **Master Key Side Bitting** – a key with a side bitting that will engage the master step of the slider mechanism.

- **Master Slider** – The master slider makes contact with the master side bitting on the key blade (Typically used in extremely large master key systems).

- **Master/Change Slider -** used in applications where additional expansion in a master key system is necessary (Typically used in extremely large master key systems).

- **Master Step –** step located on the slider that makes contact with the master side bitting of the key

- **Medeco^3 Biaxial –** refers to Medeco's newest patented product released in 2003. The patent expires in 2021. Uses Medeco Biaxial keying specifications (**K,M,Q,S,B,D angles**). Also incorporates a slider mechanism and side bittings on the key to create a three point locking system within the cylinder.

- **Mis-Cut Key –** any key blank that has been incorrectly cut or cut with the incorrect bittings.

- **MK-120G –** a form issued by Medeco to obtain additional authorization cards or to change authorization for a particular blind code or master key system to a different individual.

- **Name Authorization Card –** same as Blind Code Card except that an individual's name is personalized on the front of the authorization card to make the card unique.

- **Non-Faxable Voucher** – See "Restricted Key Order Form".

- **Pin/Level** – Pin refers to the maximum number of cut space positions allowed on a key blank. Level indicates the maximum number of depth variations allowed per cut position. Used to identify the proper pin/level key blank to use with corresponding blind code on an authorization card.

- **Plane –** a surface located on the side of the Medeco^3 key blade to allow for different side bittings to be produced on the key.

- **Registry Card –** See "Master Key Registry Card".

- **Restricted Key Order Form –** refers to the order form filled out and completed by the distributor or locksmith when a request for additional Medeco or KeyMark Silver cut keys are requested by an end user with an authorization card and proper identification. Commonly referred to as a "voucher". A locksmith may mail the restricted key order form directly to Medeco or to an authorized Medeco Distributor for GLD & SKY cut key orders only. Cut key orders for the NUK or KeyMark Silver program must be mailed to an authorized distributor. Medeco will not accept NUK or KeyMark Silver cut key orders.

- **Sidebar –** mechanism used in all Medeco cylinder designs (Original, Biaxial, and Medeco^3) used to create a dual locking principle.

- **Sidebar Gates –** cut outs in the sidebar that receive the blocking tabs of the slider when the slider is pushed inward by the proper side bitting on the key.

- **Slider** – the slider creates a third locking point within the cylinder. The slider consists of blocking tabs which prevent the movement of the sidebar. The slider contains steps that engage the side bittings located on the blade of the key. The slider is contained within a pocket located in the bottom of the plug.

- **Slider Spring** – Used to provide the required tension on the slider to block or unblock the sidebar.

- **Voucher –** See "Restricted Key Order Form".

Other Medeco Technology Designs

Medeco has additional cylinder technologies that are not displayed in this manual. These include the Medeco Original design, the Medeco Biaxial design, and the KeyMark design. These additional cylinder technologies will be covered in later editions of this manual. Figure 1 illustrates some of the differences between the Medeco cylinder technologies.

	Original	Biaxial	Medeco^3
Key Descriptions	• Medeco is coined on the front of the key • No logo on key • Round head key bow and Bell Shape key bow • Patent Number on back of Bell Shaped Key • Typically not custom coined with locksmith or end user information • Key bittings on top of key blade • Thick Head Keys = Top and bottom shoulders are even - Cam/Switch Lock Only. • Non-Thick Head keys = Bottom shoulder is off-set – Cam/Switch Lock Only	• Medeco is coined on front of key • Biaxial logo on front of key • Small Square Bow, Large Square Bow and Rounded Edge Bow keys • Picture may be coined on front of key (Patriot, Liberty Hand, Eagle, ALOA Symbol, Maple Leaf) • Typically custom coined with distributor, locksmith, or end user information on back of key • GLD/NUK keys coined with "Do Not Dup W/O Card Imprint and Signature" • Key bittings on top of key blade • Top and Bottom shoulders even	• Medeco is coined on front of key • Medeco^3 Logo (M^3) on front of key • Small Square Bow and Large Square Bow keys • Typically custom coined with distributor, locksmith, or end user information on back of key • Key bittings on top of key blade • Side bittings located on side of key blade • Non-traditional style shoulders • Greater throat length on key
U.S. Patents	3,499,302	4,635,455, 4,732,022	6,477,875
Patented Protection Through	Expired	2005	2021
Recommended For	• End users who are primarily concerned with drilling, picking, and other physical attacks • To maintain existing systems	• End users who are concerned with both key control and physical attacks such as drilling and picking • To maintain existing systems	• End users who are concerned with exclusive key control and patent protection until 2021. Individuals who are concerned with pick and drill resistance • All new installations
Key Control Levels	1-4	5-7	5-7
Key Thickness	.093"	.093"	.125"
UL 437 Listed	Yes	Yes	Yes
Master Keying Theoretical	• 6 Depths X 3 Angles to the 6th power • 34,012,224 theoretical combinations	• 6 Depths X 6 Angles to the 6th power • 2,176,782,336 theoretical combinations	• 204,073,344 Medeco^3 Original theoretical combinations • Medeco^3 Biaxial, 6 depths X 6 angles to the 6th power X 6 side bitting positions • 13,060,694,016 Medeco3 Biaxial theoretical combinations
ID Marks: Cylinders/Keys	No logo	Biaxial Logo	M^3
Angle Designations Used	L,R,C	K,M,Q,S,B,D	K,M,Q,S,B,D
Spacing	Bow to Tip	Bow to Tip	Bow to Tip
Pin Depths	1-6, shallow to deep	1-6, shallow to deep	1-6, shallow to deep
Pin Kits	K-1001	K-5002	K-5002 (Biaxial)
Position of Locator Tab Slot	Facing back of plug	Facing the side of the plug	Medeco^3 Biaxial – Facing the side of the plug
Key Machine Clamp #	95-102551-XX – Type 1 95-102561-XX – Type 2	95-102551-XX	95-101291
Pinning Increment	.015" – Half-Step .030" – Full Step	.025" – Full Step	.025" – Medeco^3 Biaxial

Figure 1 – Medeco Product Technology Differences

Medeco^3 Introduction

When the first Medeco® cylinder rolled off the production line in 1968, no one imagined the magnitude and effect that it would have in the security and locksmith industry. The concept of angled cuts, angled pins, hardened steel inserts, a sidebar mechanism, and a strong utility patent on the cylinders and keys finally gave locksmiths and security professionals the opportunity to offer their customers a high security locking solution with total protection of who controls key cutting authorization. These innovative ideas were new to the industry and Medeco quickly became the leader in what is now called the high security market.

In 1986, Medeco released Medeco Biaxial® and again set the stage for the high security market. Medeco Biaxial offered much of the same protection as the Original design; however, many aspects of that design were improved upon. Fore and Aft cuts were added to the key and pin specifications, adding millions of additional theoretical combinations to chose from. Master keying capabilities were vastly improved and new key control programs were added to give the customer an option to choose the amount key control they require.

Over the last three decades Medeco has worked closely with locksmiths around the globe to improve upon both the Original and Biaxial Medeco design. This collaboration has lead to yet another revolutionary and exciting Medeco design that will again prove that Medeco is and will continue to be the leader in the high security market. Medeco is pleased to announce their latest patented design, ***Medeco^3***.

Medeco^3 Design

Medeco^3 is a brand new utility patented product which adds to the proven high security design, of elevating and rotating pins, with the addition of a slider mechanism. Medeco^3 cylinders use offset chisel-pointed bottom pins of varying lengths that rest on the angled cuts of the key. Top pins and springs, similar to those found in a common pin tumbler lock, are also used. There is a sidebar mechanism that extends from the plug to a broaching or slot located in the wall of the shell. The sidebar has small legs that extend into the pin chamber holes and engage in slots located on the sides of the pins. The new slider mechanism, mentioned above, creates a third point of locking by blocking the movement of the sidebar.

The Medeco^3 cylinder design also incorporates four hardened steel rods, two hardened steel crescents, hardened steel top pins and a hardened steel ball bearing located in the sidebar. The use of these hardened steel inserts along with the tri-locking design and close manufacturing tolerances, results in a high security cylinder that is resistant to virtually all forms of attack.

The major differences between the Medeco^3 cylinder design and previous Medeco designs (Original/Biaxial) are the addition of a slider mechanism and the side bittings located on the side of the key. Other modifications include a pocket in the plug for the slider, narrower sidebar legs, gates in the sidebar, and a wider keyway. The components in figure 2 that are listed in italics have either been modified from the Biaxial design or are new to the Medeco^3 cylinder design The Medeco^3 key is also thicker to accommodate the side bittings.

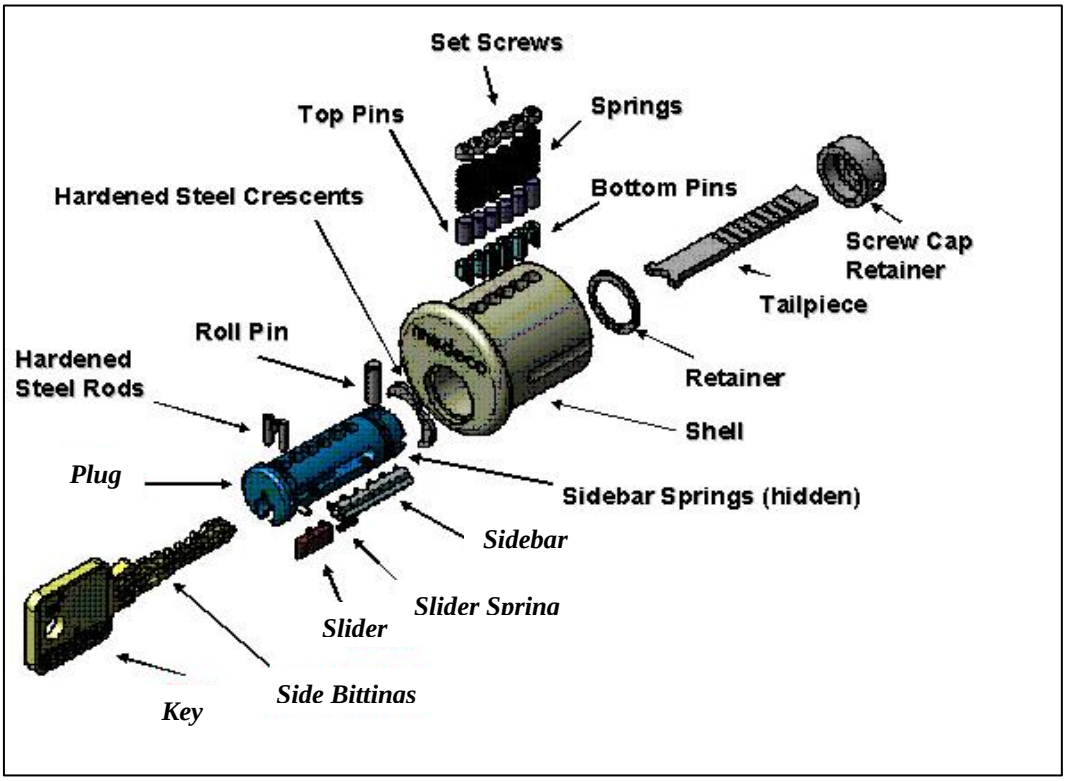


Figure 2 – Medeco[3] Mortise Cylinder. Exploded view of new or modified components

Patent Information/Cycle Testing

The Medeco[3] cylinder and key are protected by a worldwide utility patent that will last through February 6, 2021 giving you roughly 18 years of the strongest patent protection available. The patent number for the Medeco[3] design is 6,477,8758.

Medeco[3] cylinders meet and exceed the Grade 1 operation and strength requirement set at 40,000 operational cycles. In fact, Medeco[3] cylinders have been tested for over 600,000 operation cycles and still continue to function properly.

Medeco^3 Operating Principle

Before we study in detail the specifications of Medeco^3 cylinders, it is first necessary to have a basic understanding of the principle by which these cylinders operate. Medeco^3 door hardware cylinders incorporate the same basic principles as a standard pin tumbler cylinder: a plug, rotating within a shell, which turns a tail piece when pins of various lengths are aligned at a shear line by a key. However, in a Medeco^3 cylinder, the rotation of the plug is blocked by three locking points: the shear line, the sidebar, and the slider mechanism.

When the proper key is inserted into a Medeco^3 cylinder, the depths of the key raise the pin stacks to a height that creates a shear line between the plug and the shell. The bottoms pins used in Medeco^3 cylinders have a slot along one side of the pin and are also chisel pointed (Figure 3). The bottom pins are rotated by the action of the tumbler spring seating the pin on the corresponding angled cuts on the key when it is inserted. This positions the slots located on the sides of the bottom pins in front of the sidebar legs. The process of elevating and rotating the bottom pins occurs simultaneously when the proper key is inserted. In figures 4 and 5, the bottom pins have been raised the proper shear line and rotated to a position that aligns the slots in the bottom pins with the sidebar legs.

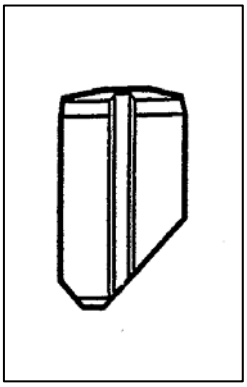


Figure 3 – Sidebar Slot in Bottom Pin

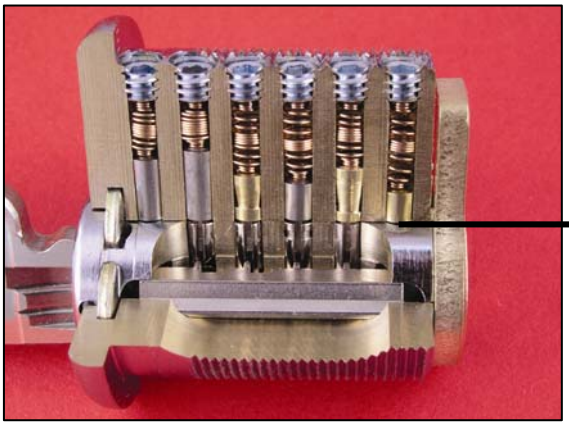


Figure 4 – Shear line created by elevating pins to proper height

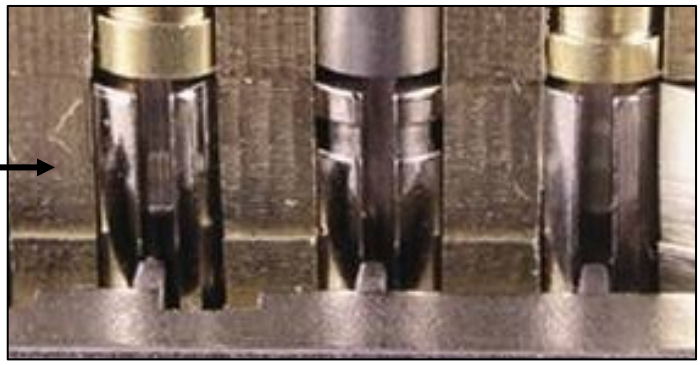


Figure 5 – Pins rotated to align sidebar slot with sidebar legs

The bottom pins also incorporate a locator tab that limits the pin's rotation within the pin chamber when a key is inserted. Medeco^3 shells and plugs have a corresponding locator tab slot in each pin chamber that prevents the pin from rotating too far (Figure 6). This keeps the slots in the pins from being mis-aligned with sidebar legs when the proper key is inserted. If the locator tab or locator tab slot were not present on the pins or in the pin chamber, the bottom pin would be allowed to rotate freely causing intermittent operation of the cylinder.

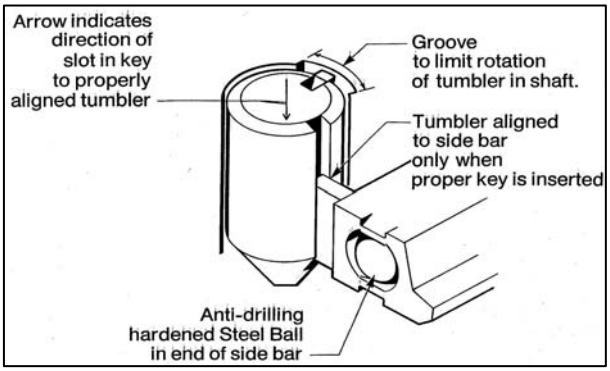


Figure 6 - Sidebar leg making contact with bottom pin. Bottom pins rotation is limited by locator tab on pin and located tab slot in pin chamber hole.

The third locking component within a Medeco^3 cylinder is the slider mechanism. The slider mechanism is spring loaded (figure 7) and makes contacts with the bittings located on the side of Medeco^3 keys. When the side bittings make contact with the slider upon key insertion, the slider is pushed to a position that aligns the blocking tabs on the slider with gates in the sidebar (Figure 8, 9, and 10). This action allows the sidebar legs to move into the slots located on the sides of the bottom pins when turning force is applied to the key (Figure 11). When a key is not present in the cylinder or when an incorrect key is inserted into the cylinder, these blocking tabs prevent the sidebar legs from entering the slots located on the sides of the bottom pins.

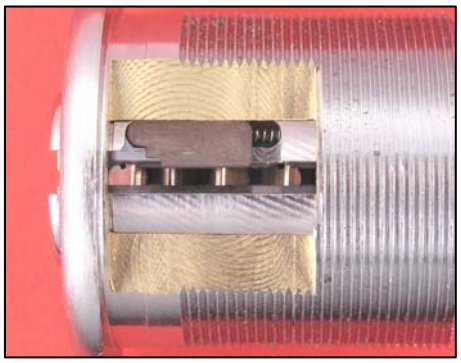


Figure 7 – Spring loaded Slider

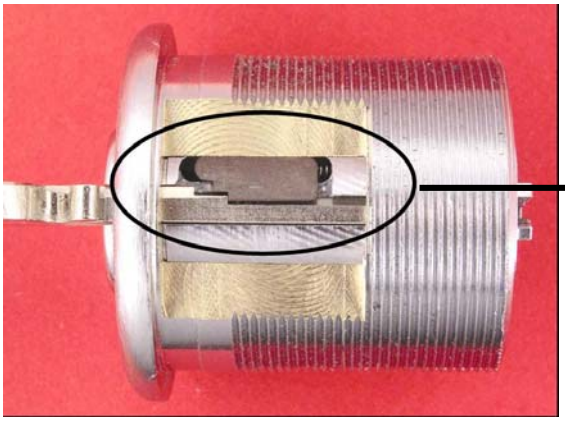


Figure 8 – Cut-Away Cylinder, Side bittings on key making contact with slider



Figure 9 – Cut-Away Cylinder, side bittings contacting steps on slider

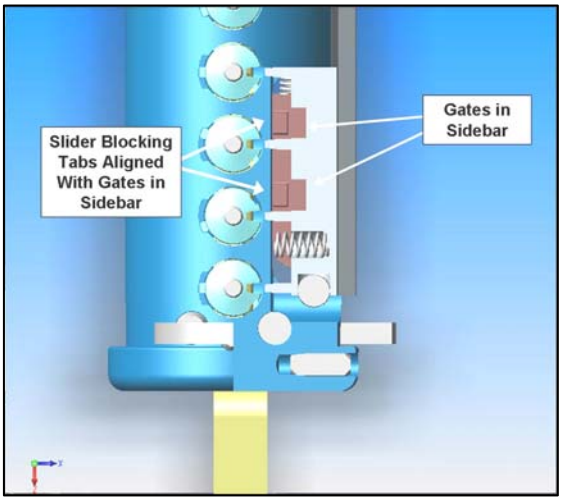


Figure 10 – Blocking tabs on slider aligning with sidebar gates

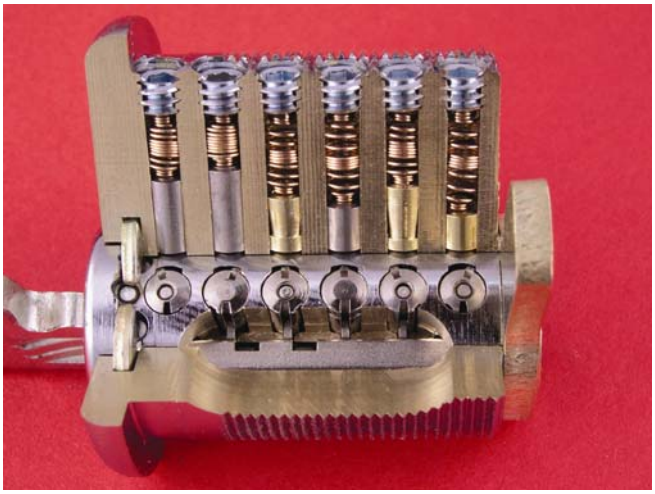


Figure 11 – Sidebar legs allowed to move into slots in bottoms pins. Plug is free to turn

Medeco^3 Biaxial Key Design and Specifications

There are five dimensional specifications for every Medeco^3 key: the cut profile, the cut depth, the cut spacing, the cut angle, and the side bitting. The profile of the cut on all Medeco^3 keys must maintain an 86° angle. This dimension is critical since the pins in a Medeco lock are chisel pointed and seat upon the sides of the cut profile rather than at the bottom of the cut.

There are six possible depths that can be used in each cut position. These depths range from a number 1 depth (shallowest) to a number 6 depth (deepest). Please refer to the chart below for depth dimensions.

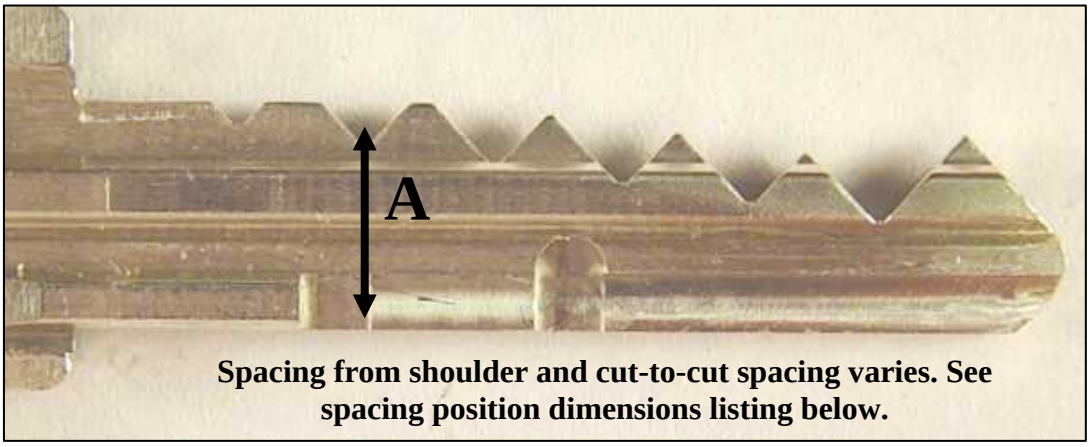


Figure 12 – Medeco^3 cut depths

Depth Dimensions "A" Root Depth	Depth Numbers
.272"	1
.247"	2
.222"	3
.197"	4
.172"	5
.147"	6

Due to the fact that Medeco^3 Biaxial bottom pins have an offset chisel point that is positioned either before the pin centerline (fore) or after the pin centerline (aft), the cut spacing on the Medeco^3 Biaxial key can change from pin chamber to pin chamber.

From the shoulder to the centerline of the first cut, using a fore space position, the dimension will be .213". From the shoulder to the centerline of the first cut, using an aft space position, the dimension will be a .275" Subsequent fore cuts and subsequent aft cuts are spaced at .170".

Position	1		2		3		4		5		6	
Spacing From Shoulder	Fore	Aft	Fore	Aft	Fore	Aft	Fore	Aft	Fore	Aft	Fore	Aft
	.213"	.275"	.383"	.445"	.553"	.615"	.723"	.785"	.893"	.955"	1.063"	1.125"

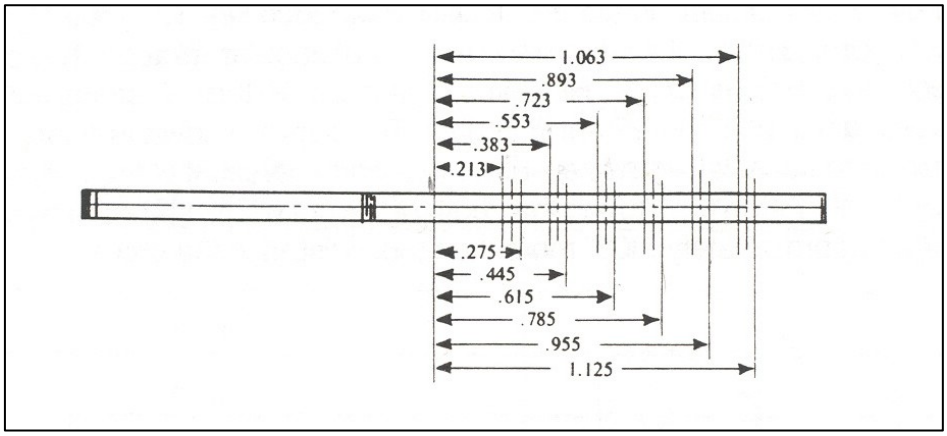


Figure 13 – Medeco^3 Biaxial spacing (fore and aft)

The Medeco^3 Biaxial design uses left, right, and center angled cuts on the key. In addition, each angled cut can be placed in a position in front of the pin chamber hole centerline (fore) or after the pin chamber hole centerline (aft).

Fore Cuts/Angles	Aft Cuts/Angles
K	M
B	D
Q	S

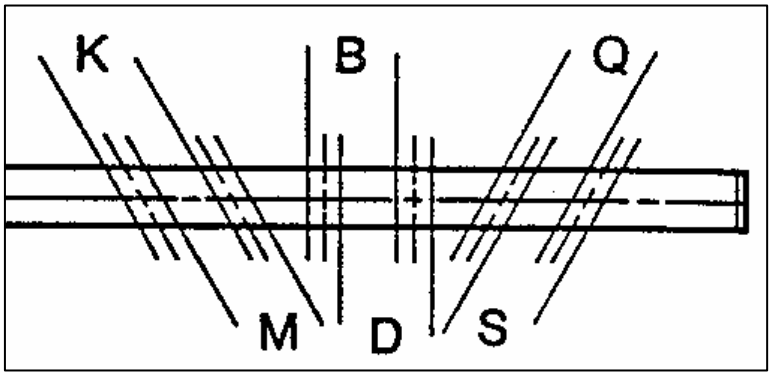


Figure 14 – Medeco^3 Biaxial angles

While there are only three angled cuts on a key, each angle can be used with either a fore pin or an aft pin. Angled cuts B and D are perpendicular to the blade of the key; "B" will be a fore cut and "D" an aft cut. Angled cuts "K" and "M" have flats pointing upwards to the left; "K" will be a fore cut and "M" will be an aft cut. Angled cuts "Q" and "S" have flats pointing upwards to the right; "Q" will be fore cut and "S" will be an aft cut. K, M, Q, and S angles are cut on an axis 20° from perpendicular to the blade of the key.

Medeco^3 Biaxial Key Specification Summary

- Medeco^3 Biaxial keys use left, right, and center angle cuts that are offset from the center line of the cut. (K,M,B,D,Q,S)
- .025" depth increment, single step progression
- 1-6 depths, 1 = shallowest, 6 =deepest
- Spacing is varied depending on angle (fore/aft) used
- MACS is varied between angles (Please see the "***Medeco^3 Biaxial MACS Specifications***").
- Keys are read Bow to Tip

Medeco^3 Biaxial Maximum Adjacent Cut Specifications (MACS)

Since Medeco^3 Biaxial angles are not positioned on the centerline of the pin chamber hole, the MACS number will be different depending on the angle used between two different cuts. An aft cut next to a fore cut has a MACS of 2. A fore cut next to another fore cut has a MACS of 3 and an aft cut next to another aft cut has a MACS of 3 and a fore cut next to an aft cut has a MACS of 4. The MACS number indicates the maximum difference between two depths or lengths of the cut that are next to each other.

Adjacent Cut Positions	MACS Number
Aft to Fore	**2**
Fore to Fore	**3**
Aft to Aft	**3**
Fore to Aft	**4**

An example of applying the MACS rules to Medeco^3 Biaxial would be a 2M (Aft) cut positioned next to a 5Q (Fore) cut. Looking at the chart above, you can see that MACS number for an aft cut next to a fore cut is 2. If we look at the depth of the cuts in our example we can see that we have number 2 depth and a number 5 depth. The difference between these depths is 3 which is more than what is allowed for the type of angles we have. These two depth/angle combinations are not valid and cannot be used.

Use the chart below to help identify the MACS between adjacent cuts. An example is included to help you understand how the chart works and how it can be applied to your key cuts.

CAUTION: Whenever a random set of cuts and angles is used to produce a key combination (rather than using a factory generated blind code) the key must be checked for MACS violations using the MACS charts contained in the "*Medeco^3 Biaxial MACS Violations*" section in this manual.

Angles	K	M	B	D	Q	S
K	3	4	3	4	3	4
M	2	3	2	3	2	3
B	3	4	3	4	3	4
D	2	3	2	3	2	3
Q	3	4	3	4	3	4
S	2	3	2	3	2	3

Using the MACS

4 6 5 3 6 2
Q B K Q K M

In this example, we will look at the first two cut positions. In the first position we have a number 4 depth with a Q fore angle next to a 6 depth with a B fore angle. We first locate the "Q" fore angle row on the left hand side of the chart. Then locate the B fore angle column located at the top of the chart. Now that we've located both angles on the chart, start with the Q angle row on the left side of the chart and move right. At the same time, move down the B column at the top of the chart. The point or number where the row and column intersect is the MACS for those angles. In our example this is a 3. This means that the cut depths cannot be 4 increments away from one another (1 depth next to a 5 depth). Next, look at the cut depths for these first two positions. In the first cut position there is a 4 depth and in the second cut position there is a 6. These two depths are two depth increments away from one another. This does not violate the MACS and can be used next to one another without interference. Complete this process for each of the cuts and angle in your bitting.

Side Bitting Space Positions

The Medeco^3 design has 6 possible positions on the side of the key blade called "side bittings". The Master Key and the Change Key use the same six space positions; however they are placed on two different planes. The side bittings are numbered 1 – 6 and are numbered from tip to bow. The side bitting positions are referenced from the bottom shoulder of the key. A number 1 side bitting is located furthest from the bottom shoulder and a number 6 bitting is located closest to the bottom shoulder. The Change Key and Master Key share the same six side bitting space positions, but are placed on different planes or levels on the key. The change key side bittings are placed on a plane that is .065" thick and the master key side bittings are placed on a plane that is .095" thick. Figure 15 shows a top view of the key and the different planes used for the change key and master key side bittings.

Side Bitting Locations		
Bitting	**"Change" Dimension**	**"Master" Dimension**
#1	0.6085	0.6085
#2	0.5585	0.5585
#3	0.5085	0.5085
#4	0.4585	0.4585
#5	0.4085	0.4085
#6	0.3585	0.3585

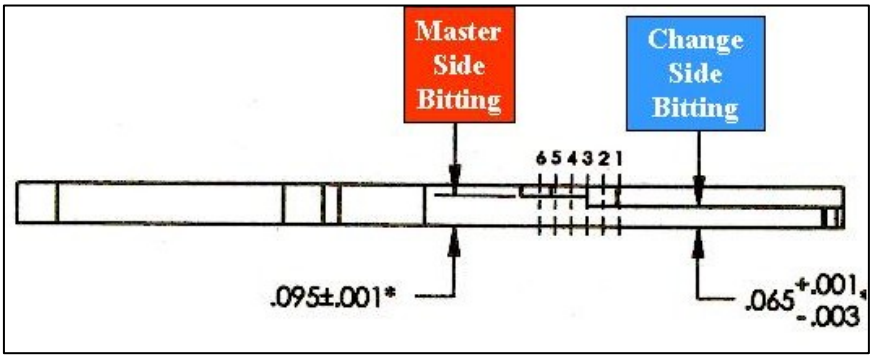


Figure 15 – Top view of key. Master Side Bitting and Change Side Bitting

As you can see, a Master Key and Change Key can have six different side bitting positions. The Change Key Side Bitting uses a deep milling in the side of the key blade which causes the change key side bitting contact area to be located on the lower plane of the key blade.

NOTE: All side bittings are placed on the key by the Medeco Factory.

Most Medeco^3 master key systems do not use master key side bittings. The factory reserves master key side bittings for extremely large master key systems and special applications.

Besides the additional side bittings and millings on the key, there are a couple of additional differences in the Medeco^3 key versus the Medeco Biaxial keys. Figure 16 shows the differences in the two designs of keys. The Medeco^3 key length is longer than the Medeco Biaxial and has a greater throat length. The longer throat length in the Medeco^3 key design allows the key to work in special applications such as cylinder guard plates, European export locks, and OEM locks. This longer throat design makes the Medeco^3 key more universal and allows it to fit many different types of applications. The bottom shoulder of the Medeco^3 key has been trimmed down from earlier Medeco designs.

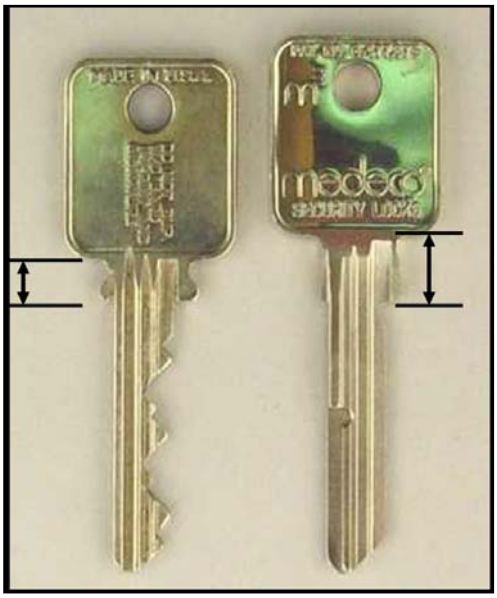


Figure 16 - Medeco^3 Biaxial Throat Length

Key Blank Part Number Break Down

KY - XX XX XX – XXXX

KY = Key Blank/Cut Key Product Series Number

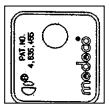
Key Bow Style/Size/Program

- **10 - Round Head**



Commercial - Original/Biaxial

- **12 – Small Rectangle**



Gold/Platinum/DBK/Enduser Programs - Biaxial

- **15 – Bell Shaped**



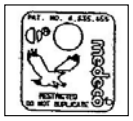
SKY Program - Original

- **16 – Round Edges**



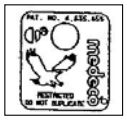
Liberty/Factory Restricted Programs - Biaxial

- **17 – Large Square**



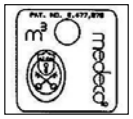
Patriot/DBK/LSC/Enduser Programs - Biaxial

- **18 – Large Square, extended throat length**



Patriot/DBK/LSC/Enduser Programs - Biaxial

- **33 – Large Square**



Freedom/LS3/DB3/DB3-D/Enduser Programs – Medeco^3

- **34 – Small Rectangle**



DND/NYC/LS3/DB3/DB3-D/Enduser Programs – Medeco^3

Keyway & Coining Info - Contact Factory

Special Function Code/Key Blank/Cut Key

00 – Key Blank
50 – Cut Key

See "*Special Function Keys*" for a listing of variations for applications that require special keys/key blanks

Pin/level – see "*Using the Medeco Code Book*" section for explanation.

66 = 6 Pin/6 Level – Door Hardware
56 – 5 Pin/6 Level – Door Hardware
54 – 5 Pin/4 Level – Cam/Switch Lock
44 – 4 Pin/4 Level – Cam/OEM Locks

Decoding/Reading Medeco^3 Biaxial Keys

A decoder or a micrometer is required to decode Medeco^3 Biaxial keys. The Medeco^3 Biaxial decoder will help you identify the fore and aft space positions, depth of the cut, and the keyway side bittings located on the side of the key blade. Below are the instructions for decode a Medeco^3 Biaxial cut key with a Medeco^3 Biaxial decoder. If you are using a micrometer to decode Medeco keys, please refer to the "***Medeco^3 Biaxial Keying Specification***" and "***Medeco^{3}Biaxial Pin Specifications***" for depth dimensions and angle designations.

Determining Cut Depths

With the cuts pointing up, Insert key into the far right hand side of the stepped cutout. Slide the key over to the left until it stops at one of the steps. Be sure the key is allowed to pivot to the left, right or center to ensure an accurate reading.

Determine the cut depths from the bow to the tip of the key. For example, a key decoded 214536 would have the #2 depth closest to the bow of the key and a #6 depth closest to the tip.

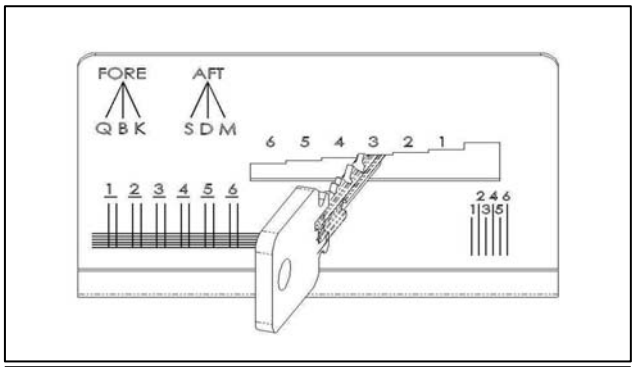


Figure 17 – Medeco Decoder. Decoding depths

Determining Fore and Aft Positions

Place the bottom shoulder of the key against the left hand edge of the fold on the gauge and place the bottom of the key blade on top of the fold.

The cuts will then be aligned under the six pairs of vertical lines which are numbered 1 through 6. These lines are used to determine if the cuts are in the fore position (toward the bow of the key) or in the aft position (toward the tip of the key).

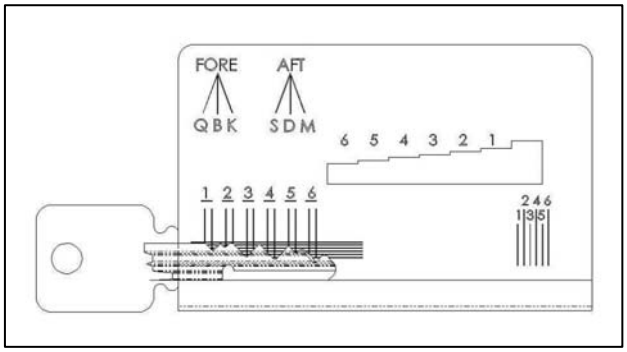


Figure 18 – Determining Fore or Aft angles

With the key resting flat against the gauge, look at the bottom of each cut and follow it until it meets the vertical lines on the gauge. If the cut aligns with the vertical line that is closer to the bow of the key in that position, the cut is in a fore position. If the cut aligns with the vertical line that is closer to the tip of the key in that position, it is an aft cut. Mark either fore or aft under each cut depth as you are decoding. See example below:

2	1	4	5	3	6
Aft	Fore	Fore	Aft	Fore	Aft

Determining Cut Directions

The bottom of the cuts will travel in one of three directions – up to the left \, straight across the blade | (center), or up to the right /. Be sure to look at the bottom of the cuts and not the peaks between the cuts. Place your key beneath the Fore and Aft Indicators (Figure 19) located at the top left hand corner of the key decoder with the teeth facing up. Based on what the angle position was in your previous step, use the appropriate Fore/Aft indictor. Match the direction of the cut with the angle letter. In our example, using the Aft indicator as a guide, look at the cut on the key. The first cut on the key is in the aft position and the

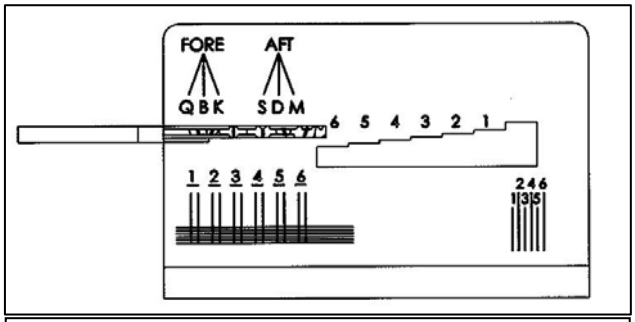


Figure 19 – Determining angles

angle is traveling up and to the left. This means that our first position is labeled with an “M” angle. See our example below:

2	1	4	5	3	6
Aft	Fore	Fore	Aft	Fore	Aft
M	Q	B	D	K	S

Determining Side Bitting Position

Place the bottom shoulder of the key against the right hand edge of the gauge directly above the bottom fold. The bottom of the key blade should be against the front of the key gauge.

The wall of the keyway side bitting will be aligned with one of the six numbered vertical lines, which are numbered 1 through 6. From this you can determine the side bitting position.

Next, you have to determine whether the side bitting number is the change side bitting or the master side bitting.

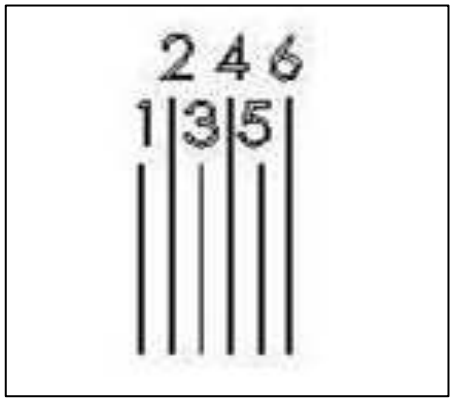


Figure 20 – Side Bitting Positions

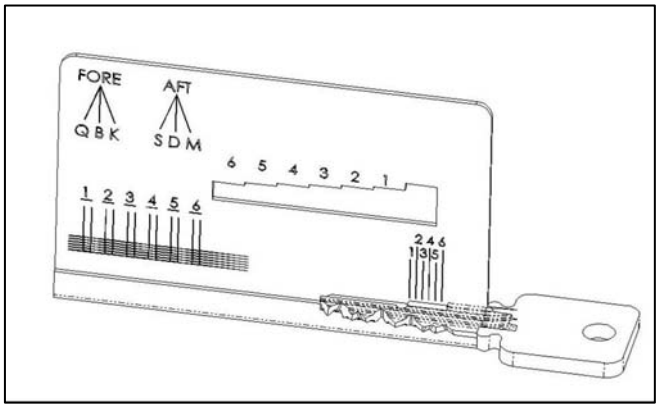


Figure 21 – Decoding Side Bittings

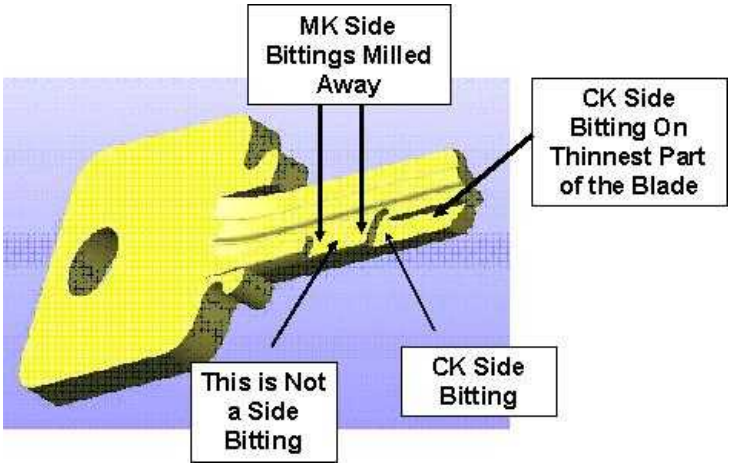


Figure 22 - Change Key Side Bitting

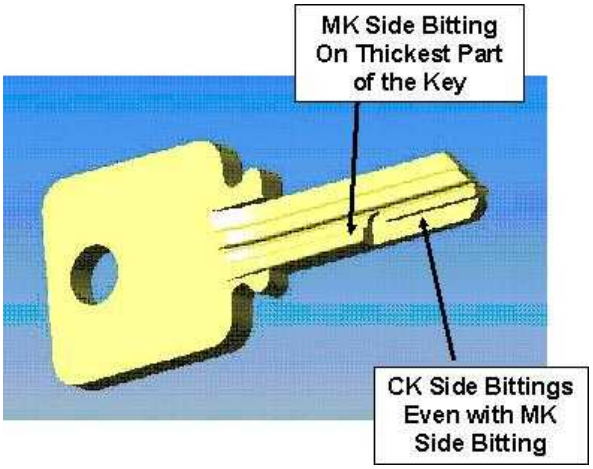


Figure 23 -Master Key Side Bitting

As you can see in figure 22, a change key will have what appears to be two steps. These two steps are located on two different planes (thicknesses). The additional step located on the higher plane, is used for the master side bitting. But in the case of a change key, the master side bitting plane will be machined back toward the shoulder of the key so that it will never make contact with the slider. The master key side bitting is machined away to ensure that a change key cannot be modified into a master key. Remember the change key side bittings are located on the lower plane (thinner) of the key and the master key bittings are located on the higher plane (thicker) of the key. **Both the change key and the master key side bittings are cut at the factory. Change key and master key side bittings cannot be cut in the field.**

When decoding the side bitting for a Medeco^3 Biaxial key, reference the longer vertical edge that is positioned furthest from the shoulder of the key. A key may appear to have two vertical edges; however, the one furthest from the shoulder is the <u>active</u> change side bitting. The one closest to the shoulder is the master side bitting machined back so as not to engage the slider. (Figure X –dale-pic of change key). The radius edge of the side bitting is not referenced when decoding the key. In figure 24, we can see that the side bitting for this change key is a 3. This information is important when ordering product or slider mechanisms from the factory.

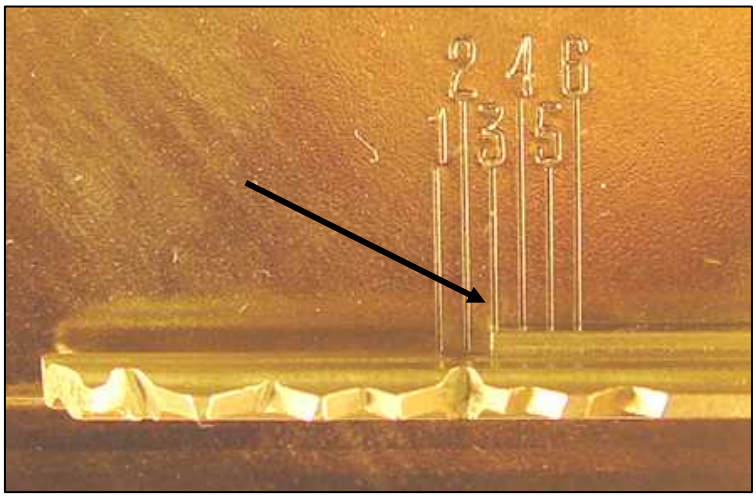


Figure 24 – Decoding # 3 side bitting

How to Use Medeco^3 Keys

The following procedures should be communicated to Medeco end-users in order to prolong the life of the key and to prevent key breakage and potential lockout situations.

1. Grasp the bow or head of the key between your thumb and index finger with the teeth pointing upward (deadbolt, rim, mortise, knob type locks). If your lock is a cylindrical lever lockset, the teeth of the key should be pointing horizontally or to the side.
2. Place the tip of the key against the front of the keyway and allow the tip of the key to find the dimple of recessed portion of the keyway. The dimple on the keyway is designed to help guide the tip of the key in to the keyway.
3. **Slowly** push the key **straight** into the keyway until it stops.
4. Make sure the key is **fully** inserted into the keyway.
5. For Deadbolt applications, rotate the key 360 degrees to unlock the lock and remove the key by pulling it straight out. **Push or pull open the door only after the key has been removed. Use the handle or knob to open the door. Do not use the key to push or pull open the door**.To lock the door, turn the key in the opposite direction that you used to unlock the lock and continue turning the key until the cuts on the key are pointing straight up or are in the 12 o'clock position.

   For a Storeroom Function key-in-knob/key-in-lever lockset, rotate key far enough to retract the latch. Using the handle or knob, partially open the door. Remove key, making sure to pull the key straight out of the cylinder. Continue opening the door using the knob or lever.

   For other function locksets, rotate the key far enough to unlock the knob or lever. Pull key straight out and continue opening the door.

6. **Important:** Make sure the key has been fully withdrawn before you attempt to place the keys in your pocket or before walking away.

In addition to these steps it is important that Medeco cylinders be lubricated periodically with a Medeco KeyLube 2.0, Super Lube, or PoxyLube. The bolt or the latch that the Medeco cylinder operates must be free of excessive bind or pressure which can be caused by a misaligned door or an improper installation. The key holder (end-user) should notify their supervisor if a Medeco key is difficult to turn or is difficult to insert into the lock.

Medeco^3 keys should not be used to:

1. **Open/close the door.** Medeco keys should not be used as a means of opening or closing the door. Make sure the key is fully inserted or fully extracted from the cylinder before opening or closing the door.

2. **As a cutting tool**. Medeco keys should not be used to open packages or other containers. Packing tape of pieces of cardboard could get lodged in the cuts of the key which could prevent the key from operating properly.

Using the Medeco Codebook

The Medeco factory provides a unique blind code that references the cuts and angles of a key. The blind code may be located either on an authorization card or metal tag that the end-user has in their possession. On occasion, it may be necessary to decode the blind code in order to facilitate cylinder pinning or key cutting. In order to properly decode the blind code, the Medeco Biaxial Product code book (LT-101003) is required.

The Medeco Biaxial code book is divided into four sections. The first section is used for door hardware bittings (rim/mortise, KIK, etc.). The second section is used for interchangeable core codes. The third section is used for cam/switch lock codes and the fourth section is used for the angle designations.

Decoding Medeco^3 Biaxial Blind Codes

The blind codes for Medeco^3 Biaxial product consists of an alphanumeric code that can be decoded to obtain the cuts and angles. The type of key used, the key control program, the bittings, and angles can all be obtained from decoding the blind code. An example of a Medeco^3 Biaxial blind code is in figure 25.

The letter designations, type of key, page numbers referenced, and an example key blank part number for each type of Medeco^3 Biaxial keys are listed below:

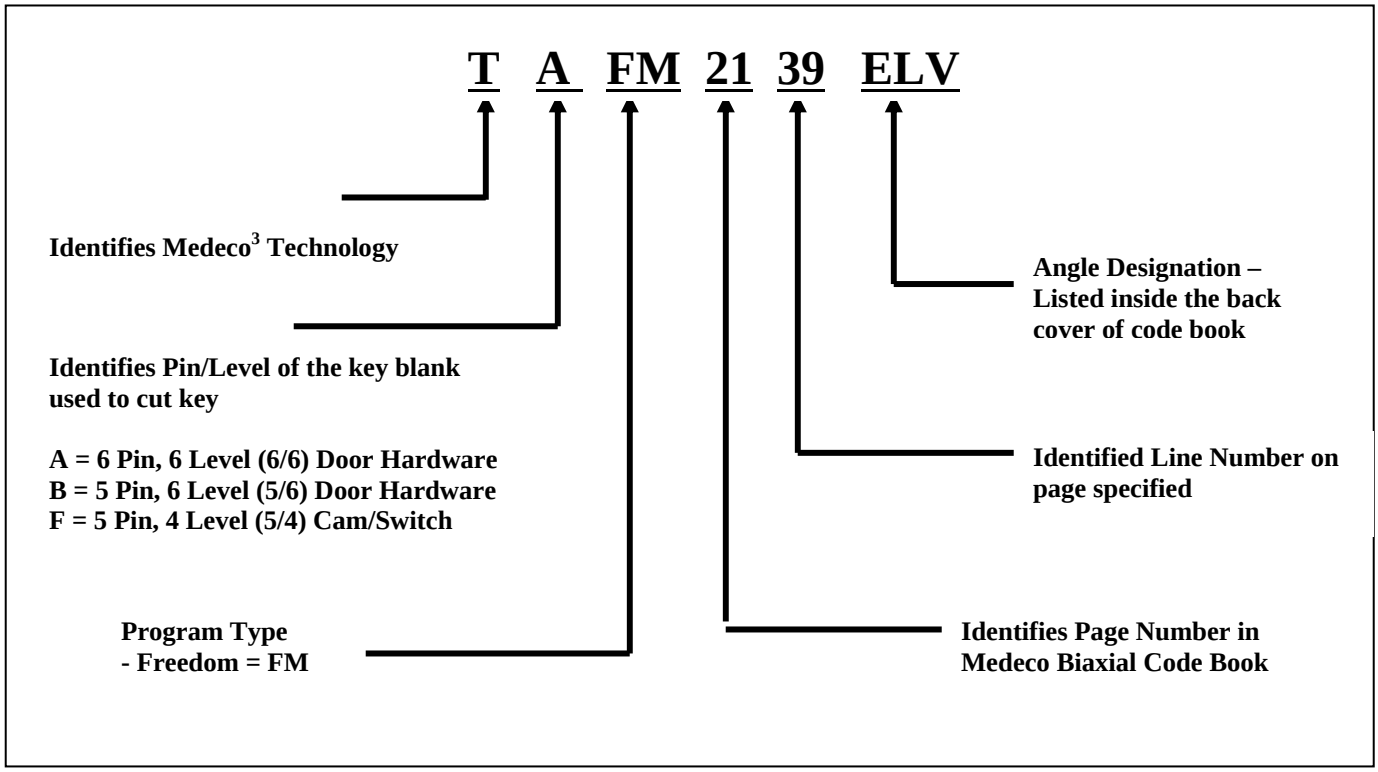


Figure 25 – Medeco^3 Biaxial Blind Code

Letter Designation	Type of Key	Type of Product	Page Numbers	Key Blank Part Numbers
A	6 pin/6 level key	Door Hardware	01-69	KY-XX6600-XXXX
B	5 pin/6 level key	Door Hardware	01-69	KY-XX5600-XXXX
F	5 pin/4 level key	Door Hardware	01-69	KY-XX5400-XXXX

The first character of the blind code identifies the Medeco[3] technology being used. In our example, **T**AFM2139ELV, the "T" represents Medeco[3] Biaxial Technology. The second character references the type of key used. In the example, T**A**FM2139ELV, the "A" signifies a 6 pin/6 level key blank (please refer to the chart above for letter designations and their corresponding key types). The third and fourth characters identify the Medeco[3] program you are working with. In the example, TA**FM**2139ELV, the "FM" signifies the Freedom Program. The fifth and sixth digits reference the page number of the Medeco Biaxial code book. In the example, TAFM**21**39ELV, "21" represents the page number of the code book (Figure 26). The seventh and eighth digits reference the line number found on page 21 of the code book. On this line, the cuts of the key will be found. In the example, TAFM21**39**ELV, the "39" represents the bittings **2 6 2 4 4 2** (Figure X). The ninth, tenth, and eleventh characters reference the angle designation for the code and can be found inside the back cover of the code book. In the example, TAFM2139**ELV**, "ELV" represents the angles **D M S Q S B** (Figure 27).

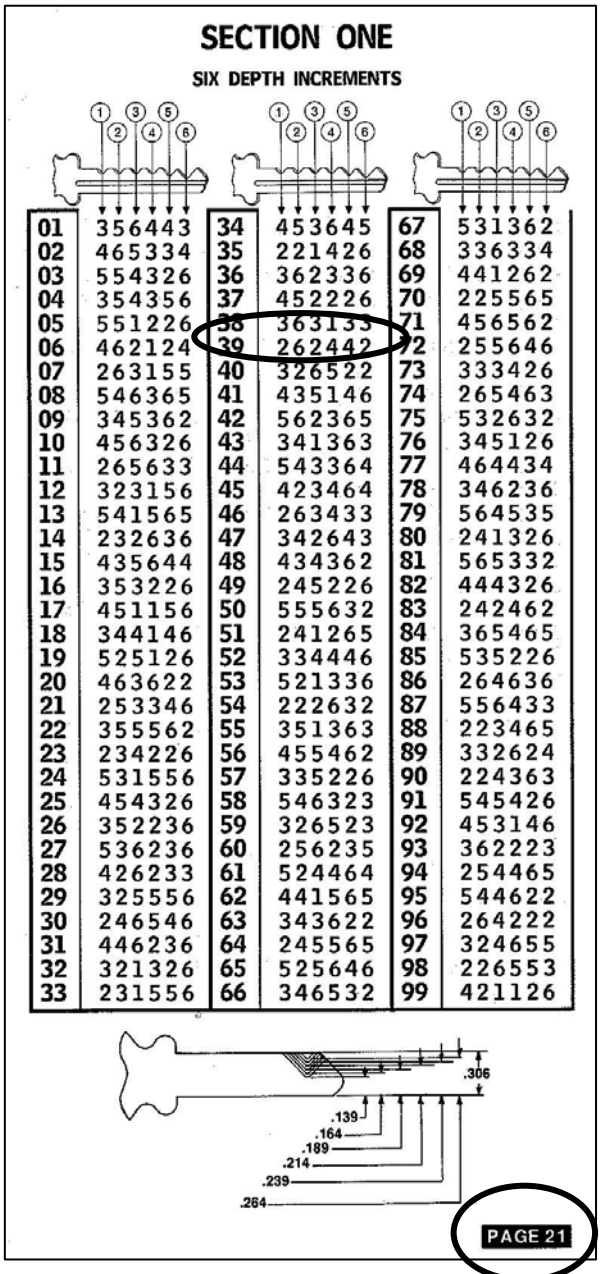


Figure 26 – Cut Depths, Pg 21



Figure 27 – Angles, back cover of code book

Medeco[3] Biaxial Interchangeable Core Codes

Medeco[3] Biaxial Interchangeable cores require two keys (an operating key and a control key) with two different but related bittings for the operation of the core and the control lug. The control key for the 32 Series interchangeable core must be 3 increments shallower than the operating key in the 3rd and 4th space positions. This means that the operating key can only contain a 4, 5 or 6 depth in the 3rd and 4th space positions. Pages 62 – 69 of the Medeco Biaxial code book provides a listing of the proper codes to use for 32 Series interchangeable cores. The even pages, 62, 64, 66, and 68 lists the proper operating key bittings (Figure 28). The odd pages, 63, 65, 67, and 69 lists the appropriate control key bittings for the previous page of operating key bittings by line number (Figure 29). An example of blind codes used for the 32 Series Interchangeable Core operating keys and control keys are listed below.

Example:

Operating Key Blind Code **–** A1PA***6202***ARX **(Pg 62 –Operating key bittings, line 2)**

Page 62, line 2 corresponds to page 63, line 2

Control Key Blind Code - A1PA***6302***ARX **(Pg 63 – Control key bittings, line 2)**

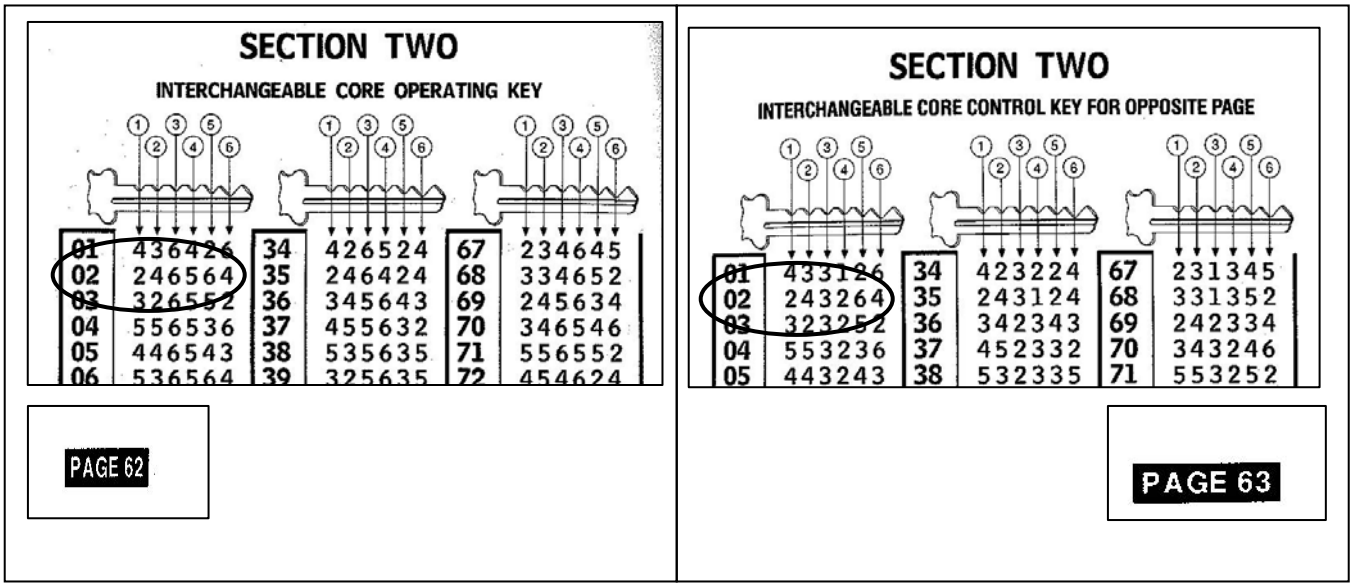


Figure 28 - Even pages – operating key bittings	Figure 29 – Odd pages – control key bittings

In our example, bittings for the operating key are shown on page 62, line 02 (Figure 28) as 2 4 6 5 6 4. Notice that the bittings in the 3rd and 4th position are a 6 and a 5. In the example, bittings for the control key are shown on page 63, line 02 (Figure 29) as 2 4 3 2 6 4. Notice that the bittings in the 3rd and 4th position of the control key are 3 pinning increments shallower than the bittings in the 3rd and 4th position of the operating key.

Medeco[3] Biaxial Pin Design and Specifications

There are five primary design specifications for each Medeco[3] bottom pin: the diameter of the pin, the pin tip angle, the chisel point location, the locator tab position, the slots on the side of the pins, and the pinning increment/depth. Figure 30 shows the components of a Medeco[3] Biaxial bottom pin.

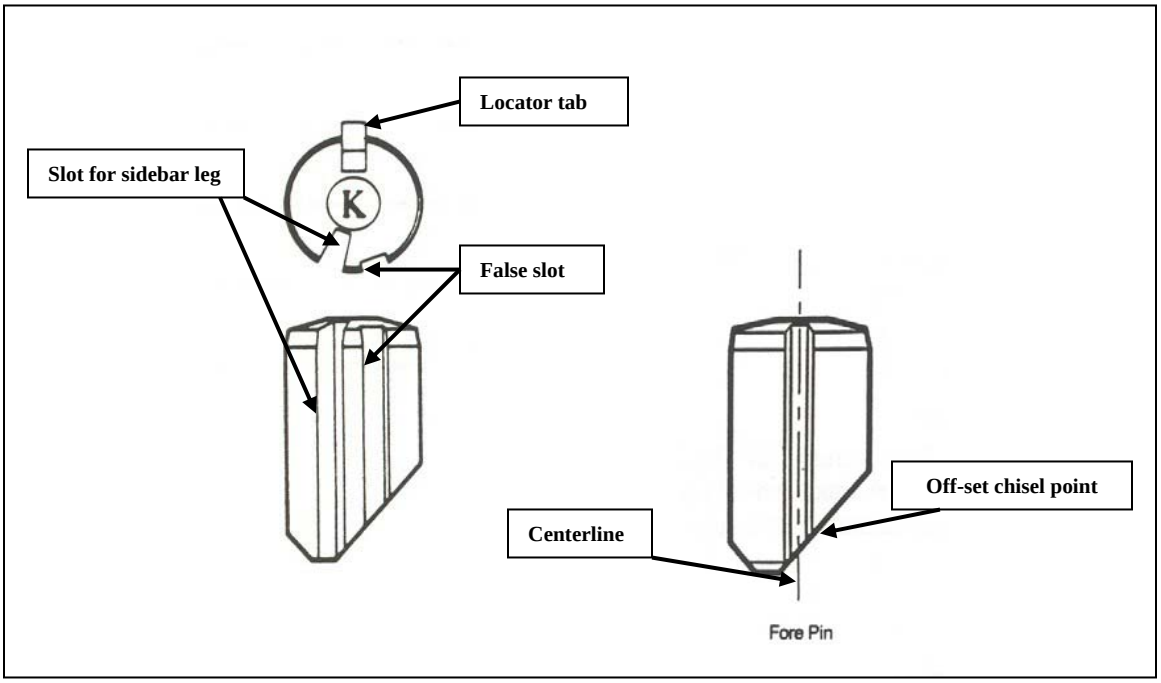


Figure 30 – Medeco[3] Biaxial Pin Components

Medeco[3] bottom pins are made of brass and are nickel plated for wear resistance. Medeco[3] Biaxial bottom pins are .135" in diameter and have a chisel point with an 85 degree angle. The chisel point on these bottom pins is off-set 0.031" in front of or after the centerline of the pin chamber hole. The chisel point tip allows for two different space positions within each pin chamber. These two different spacing positions are called FORE and AFT (Figure 31). This provides additional master keying capacity.

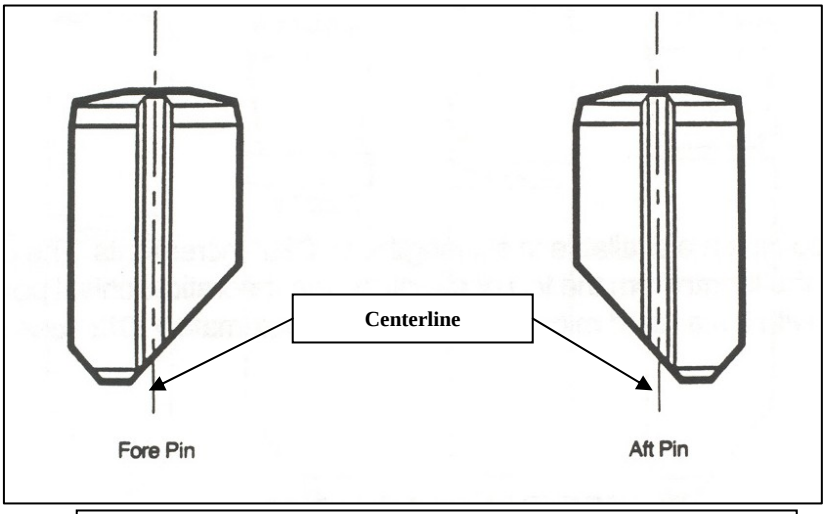


Figure 31 – Fore and Aft Pins

As you can see in Figure 31, the chisel point is located either before or after the centerline of the pin. Pins with chisel points be**FORE** the centerline are classified as "FORE" pins and pins with the chisel point **AFT**er the centerline are classified as "AFT" pins. FORE pins are available in three angles: B, K, and Q. AFT pins are available in three angles: D, M, S.

Bottom pins labled B and D will have a slot milled directly on the centerline of the pin. Bottom pins labeled K and M will have a slot milled 20 degrees to the left of the centerline of the pin. Bottom pins labeled Q and S will have slots milled 20 degrees to the right of the centerline of the pin.

The locator tab on Medeco^3 Biaxial bottom pins is located along the centerline of the pin opposite the sidebar slot (Figure 30). The locator tab limits the pin's rotation within the pin chamber from 40-45 degrees. This ensures that the slot on the side of the pin always faces the sidebar leg and keeps the pin from rotating too far.

Some Medeco^3 Biaxial bottom pins contain two slots (Figure 30). The deeper of the slots engages the sidebar leg. The shallower slot is a false slot that provides additional pick resistance.

Medeco^3 Biaxial bottom pins are available in six lengths of .025" increments. Figure 32 shows the pin length and the corresponding pin number.

Pin Length	Pin Number/Length
.227"	1
.252"	2
.277"	3
.302"	4
.327"	5
.352"	6

Figure 32 – Medeco^3 Biaxial Bottom Pin Lengths and Numbers

Decoding Medeco^3 Biaxial Bottom Pins

To decode a Medeco^3 Biaxial bottom pin, look at the top of the bottom pin and orient the locator tab so that it is in the 12 o'clock position as if you were looking at a clock. Use figures 33, 34, and 35 to help assist you in decoding Medeco^3 Biaxial bottom pins.

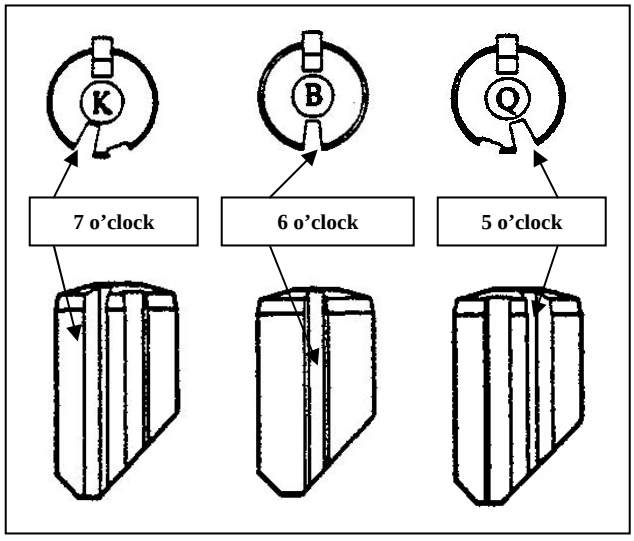


Figure 33 – Medeco^3 Biaxial Fore Pins

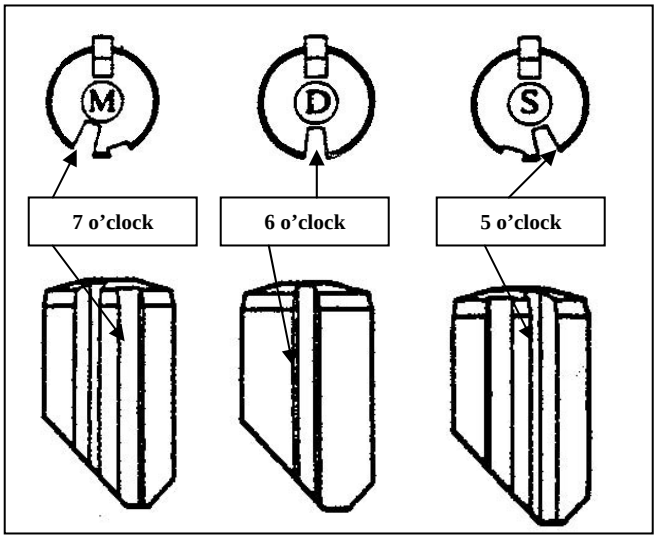


Figure 34 – Medeco^3 Biaxial Aft Pins

Sidebar Slot Location	Angle ID (Looking at the top of pin-clockface)	Chisel Point Position in relation to Centerline of Pin	Angle Designation
20° left of centerline	7 o'clock position	Left Side	K
20° left of centerline	7 o'clock position	Right Side	M
Directly above centerline	6 o'clock position	Left Side	B
Directly above centerline	6 o'clock position	Right Side	D
20° right of centerline	5 o' clock position	Left Side	Q
20° right of centerline	5 o' clock position	Right Side	S

Figure 35 – – Fore and Aft Pins and the Slot Location. Pin decoding.

If the pin you are decoding is a fore pin and the sidebar slot is at the 7 o' clock position, then it is a K angle pin. If the fore pin has the sidebar slot at the 6 o'clock position, then it is a B angle pin. If the fore pin has the sidebar slot at the 5 o'clock position, then it is a Q angle pin.

If the pin you are decoding is an aft pin and the sidebar slot is at the 6 o'clock position, then it is a M angle pin. If the aft pin has the sidebar slot at the 6 o'clock position, then it is a D angle pin. If the aft pin has the sidebar slot at the 5 o'clock position, then it is an S angle pin. Use the example below to assist you in decoding a Medeco^3 Biaxial bottom pin.

Step 1: - Position Locator Tab at 12 o'clock – Figure 36

Looking down on the pin, rotate it until the locator tab is positioned at 12 o'clock.

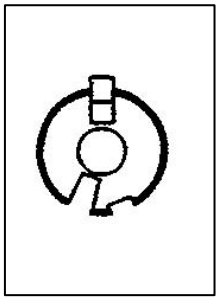


Figure 36 – Locator tab positioned at 12 o'clock.

Step 2: - Determining Fore or Aft – Figure 37

Looking at the side of the bottom pin, note the location of the chisel point. If the chisel point is before the centerline, then it is a fore angle pin. If the chisel point falls after the centerline, then it is an aft angle pin (refer to figure 31). In our example in figure 37, we can see that the chisel point on this pin is before the centerline and is a fore angle pin.

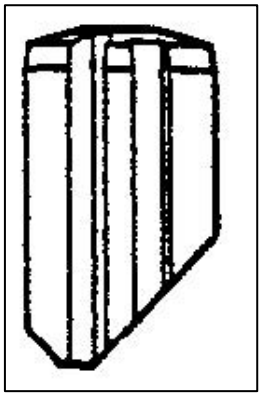


Figure 37 – Chisel point in before centerline. This is a fore angle pin.

Step 3: Determining Angle Designation –Figure 38

We have already identified the pin in our example as a fore angle pin. Next, we need to identify the direction of the angle of the pin. Referring back to figure x and looking at the top of the pin as if it were a clock face, we can see that the sidebar slot is located at the 7 o'clock position. This makes the pin in our example a "K" fore angle pin.

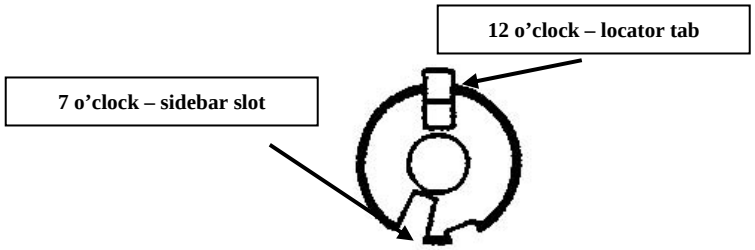


Figure 38 – Sidebar slot at 7 o'clock

Step 4: Determining Pin Length – Figure 39

Using a micrometer, measure the length of the pin. Use figure 32 to help you identify the pin number. In our example, the pin measures .288" from top to bottom. Using figure 32, we can see that this equals a number 3 bottom pin.

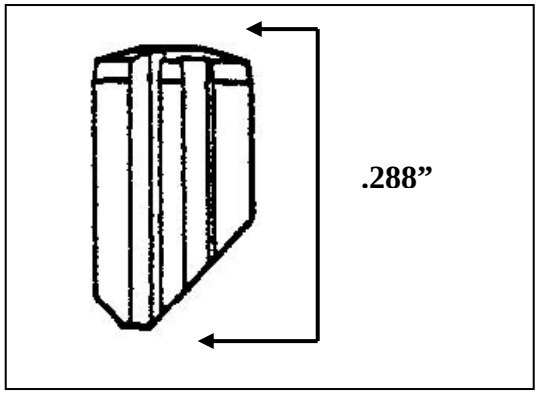


Figure 39 – Bottom pin measures .288". This is a number 3 length bottom pin.

The decoding of the bottom pin is complete. In the example, the bottom pin was decoded to be a 3K bottom pin. This information can be used for ordering additional pins, re-keying cylinder, or organizing your pinning kit.

Medeco^3 Biaxial Pin Specification Summary

- Medeco^3 Biaxial cylinder uses left, right, and center angle pins that are offset from the center line of the pin. (K,M,B,D,Q,S)
- .025" depth increment, single step progression
- 1-6 depths, 1 = shallowest, 6 =deepest
- Medeco^3 Biaxial Pin Diameter of .135"
- Chisel Point Angle = 85°
- Bottom pins are made out of brass and nickel plated for wear resistance

Graduated Drivers

Medeco^3 Biaxial cylinders use graduated drivers or top pins. Graduated top pins use drivers of different lengths in order to achieve a uniform pin stack height in each pin chamber. Although Medeco^3 Biaxial cylinders do not use a consistent pin stack height, the stack height in each pin chamber should be no less than .499" and no more than .524" for the cylinder to function properly. Medeco top pins are furnished in only five lengths with a .030" increment. Top pins that are silver in color are made out of hardened steel and have nickel plating to resist rust. Two hardened steel top pins should be used in each cylinder. These pins provide additional drill resistance.

Mushroom pins are provided in the Medeco pin kit in the number 3 and number 5 top pin lengths to help against picking attacks. Additional mushroom pins can be ordered in a 1 or 2 driver length (TP-F10-1M and TP-F10-2M). Mushroom pins are made out of brass and are not nickel plated. It is recommended that two mushroom drivers and two hardened steel drivers be used in each Medeco cylinder whenever possible. Mushroom pins should be inserted with the cap pointing down toward the bottom pin. Figure 40 shows a Medeco mushroom driver.

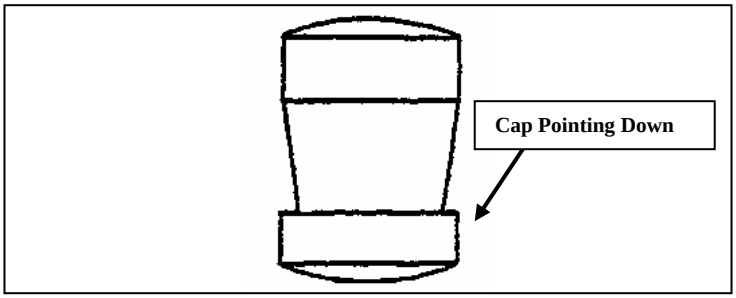
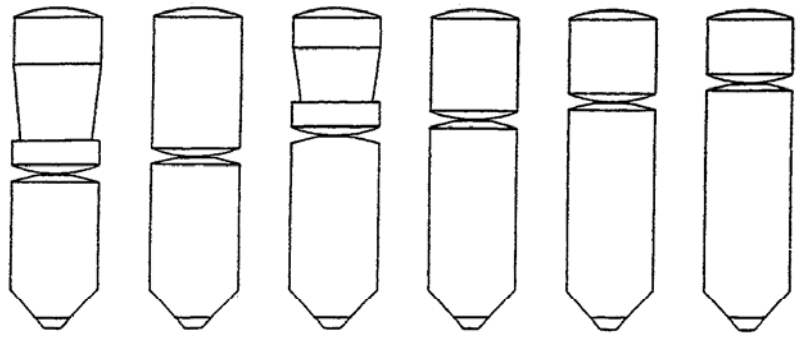


Figure 40 – Mushroom Top Pin

Medeco cylinders are engineered to operate with a specific amount of spring pressure in each pin chamber. Too much pressure could cause spring fatigue or failure; too little pressure could cause malfunction because pins would not seat and rotate to the correct angle. To maintain the correct spring pressure, the total height of all the pins within an individual pin chamber must be constant.



.515" DRIVER OR TOP PIN SELECTION CHART
For rim, mortise, and deadbolt cylinders with allen set screws retainers.

Figure 41 – Medeco[3] Graduated Drivers

Bottom Pin Length	Bottom Pin Number	Driver or Top Pin Number	Driver or Top Pin Length	Top Pin Part Number
.238	1	1	.270	TP-F10-1T
.263	2	2	.240	TP-F10-2T
.288	3	3	.210	TP-F10-3M
.313	4	4	.210	TP-F10-3T
.338	5	5	.180	TP-F10-4M
.363	6	6	.150	TP-F10-5T

Figure 42 – Medeco3 Biaxial Top Pins

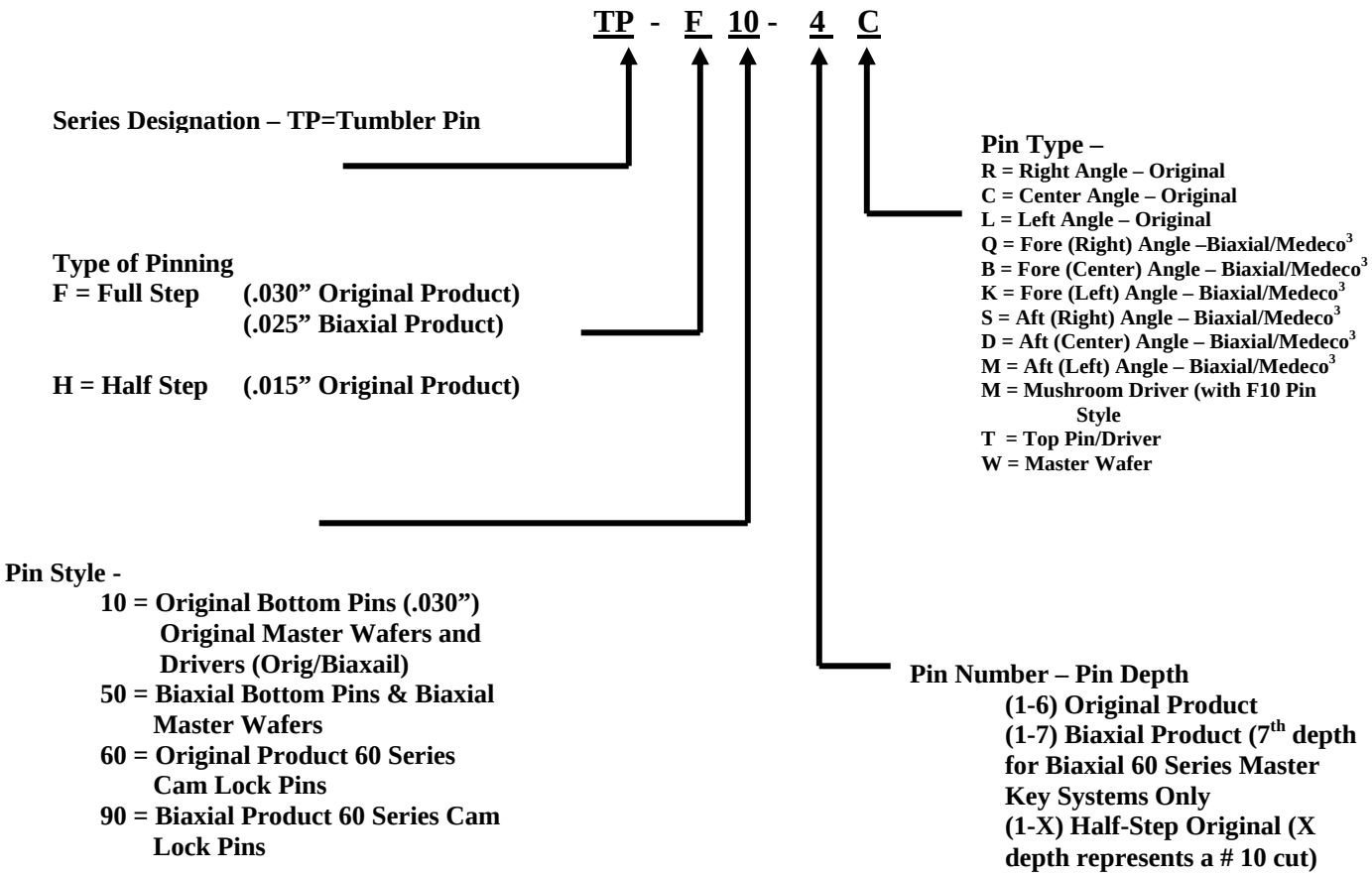
Figure 43 on the following page is a cross reference chart used for Medeco[3] Biaxial top pins and master wafers.

MEDECO TOP PIN AND MASTER WAFER CROSS REFERENCE

DRIVER PART NUMBER	DIMENSION	USED WITH BOTTOM PIN IN .015 INCREMENT ONLY	TOP PIN # ORIGINAL .015	TOP PIN # ORIGINAL .030	TOP PIN # BIAXIAL .025
(*HARDENED STEEL)					
F10-1T*	.270	0	1	1	1
F10-2T*	.240	1 + 2	2	2	2
F10-3T*	.210	3 + 4	3	3	4
F10-4T	.180	5 + 6	4	4	
F10-5T*	.150	7 + 8	5	5	6
(MUSHROOM TOP PINS)					
TP-F10-AM	.300		OS 1+2	OS #2	
F10-1M	.270	0	1	1	
F10-2M	.240	1 + 2	2	2	
F10-3M	.210	3 + 4	3	3	3
F10-4M	.180	5 + 6	4	4	5
(BIAXIAL MASTER WAFERS)					
F50-1W	.025				1
F50-2W	.050				2
F50-3W	.075				3
F50-4W	.100				4
F50-5W	.125				5

Figure 43 – Medeco[3] Biaxial Top Pin and Master Wafers Cross Reference

Medeco³ Pin Part Number Breakdown



Medeco^3 Sidebar Specifications

The sidebar used in Medeco^3 cylinders contains two gates. These gates receive the blocking tabs located on the top of the slider. When the slider is pushed inward by a key with the proper side bittings, the blocking tabs on the slider will move into the correct position and align themselves with the gates on the sidebar (figure 44). This allows the sidebar legs to engage the sidebar slots on the side of the bottom pins. Figure 45 shows a comparison of the Medeco^3 sidebar and the original design of the sidebar (Medeco Original/Biaxial). The sidebar legs have also been modified. The sidebar legs for the Medeco^3 sidebar are narrower than the Medeco Biaxial sidebar design. This modification was made to allow the slider to fit under the sidebar.

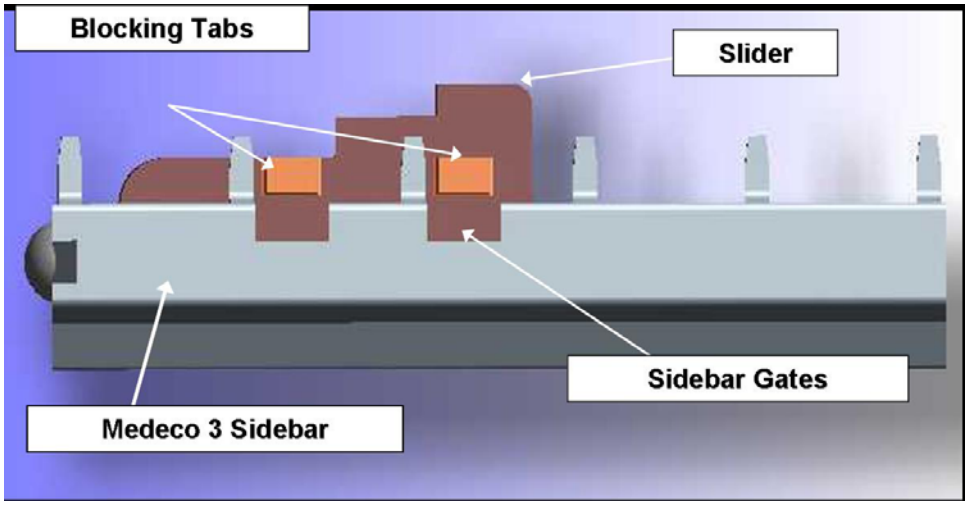


Figure 44 – Sidebar Gates aligned with slider block tabs

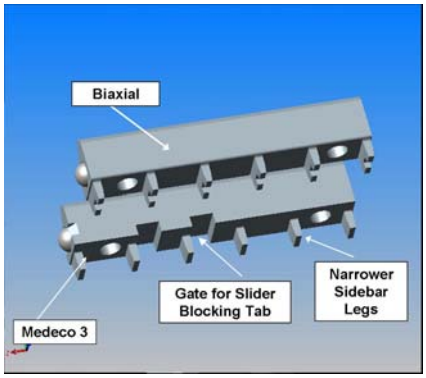


Figure 45 – Medeco^3 Sidebar Changes

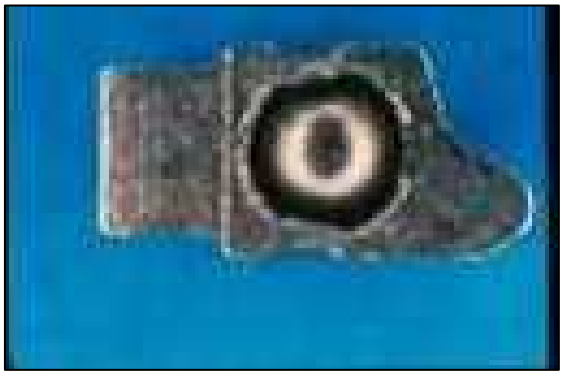


Figure 46 – Hardened Steel Ball Bearing in Saidebar Face

Medeco^3 sidebars have a hardened steel ball bearing in its face to provide additional drill resistance (figure 46). The ball bearing is staked into place at the Medeco factory and should not be removed. The sidebar is not reversible and should be installed with the ball bearing pointing toward the cylinder face. The sidebar is made of brass and is nickel plated. Two small springs are installed on each end of the sidebar to provide the proper amount of tension. The sidebar used in door hardware cylinders was widened in 1989 from .105" to .121" to improve the security and pick resistance of the cylinder. Another change was made in 2003 to include gates to accept the Medeco^3 slider mechanism (Figure 45).

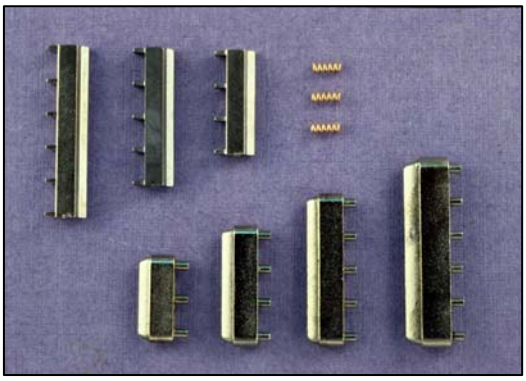


Figure 47 – Medeco Sidebars

Medeco sidebars are available in a variety of lengths (Figure 47) to accommodate the many different cylinder designs within the Medeco product line. The chart below describes the different types of sidebars available and lists their respective part numbers and where they are used.

Part Numbers

Sidebar Pin/Level	Product Type	Part Number (Does not include sidebar springs)
6 pin	Door Hardware	CP-084671
5 Pin	Door Hardware	CP-084571
5 Pin/4 Level	Cam/Switch Lock	CP-085580
4 Pin/4 Level	Cam Lock	CP-085480**
3 Pin/4 Level	Cam Lock	CP-085380**

**** Sidebar is staked into place**

Sidebar Springs – CP-030018

Only two sidebar springs are used with each sidebar.

Medeco^3 Slider Mechanism Specifications

The slider mechanism features one or two steps, blocking tabs, a spring hole, and a spring (Figure 48). The slider mechanism works in conjunction with the side bittings on the key and the sidebar to create a third locking point within the cylinder, locking out any key without the proper side bitting combination. Steps on the slider can be placed in six different space positions, on two different planes. A slider can have a high step (change only), a low step (master only) or a combination of a high and low step (change/master). The change only slider is used in the vast majority of Medeco^3 cylinders and is the only style most technicians are likely to encounter. Figures 51, 52, and 53 displays the three types of sliders.

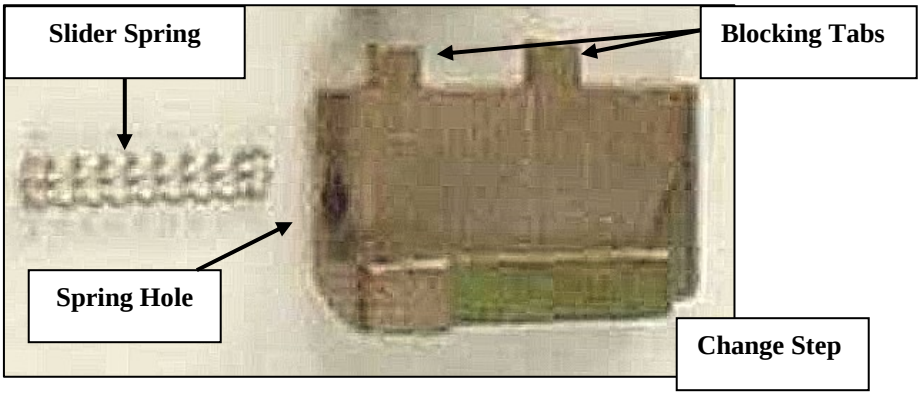


Figure 48 – Slider, Slider Spring and Blocking Tabs

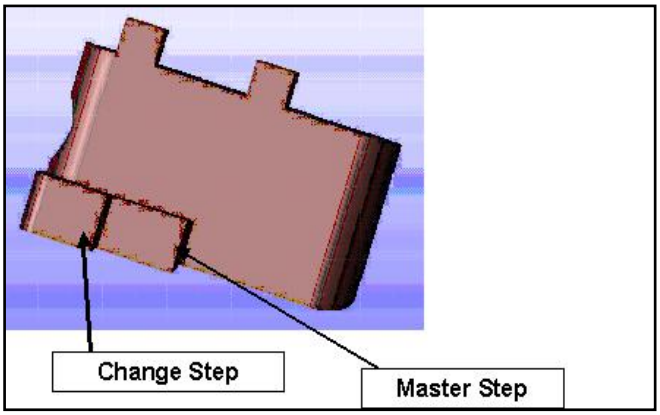


Figure 49 -Change/Master Slider

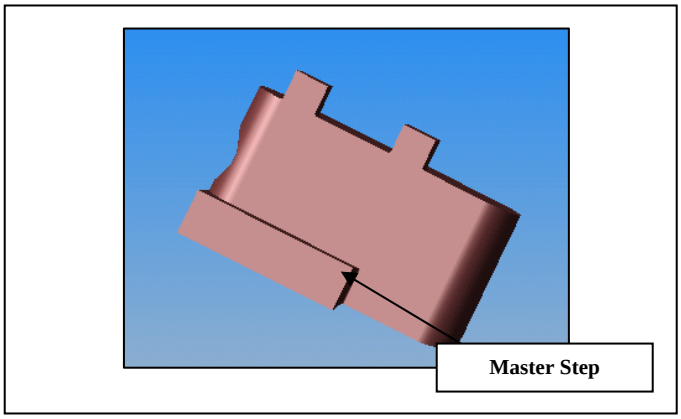


Figure 50 – Master Slider

Figure 49 shows two different steps protruding from the slider. The step on the higher plane engages the side bitting of a change key while the step on the higher plane engages the side bitting of a master key. A master slider shown in figure 50 only allows a key with the proper master side bitting to operate it. Notice that it only has one step and that it is placed on the lower plane.

The slider is made out of hardened steel material and provides some additional drill resistance; however, its primary purpose is to provide durability and wear resistance. The primary drill resistance, in the cylinder, is provided by the hardened steel inserts at the front of the plug and shell, the hardened steel top pins, and the hardened steel rods inside the bottom pins.

If you notice in figures 49 and 50, there are 2 tabs or teeth along the top side of the slider. These blocking tabs prevent the sidebar from moving inward when there is no key inserted or if a key with the incorrect side bitting is used. The slider is spring loaded, so constant pressure or tension is being applied to the slider keeping it from being properly aligned with the sidebar gates. The slider will only move once a key with the proper side bitting pushes or moves the slider to the position where the blocking tabs are correctly aligned with the sidebar gates. This creates a third locking point within the cylinder.

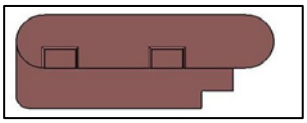


Figure 52 -Change/Master Slider

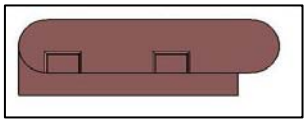


Figure 51 -Master Only Slider

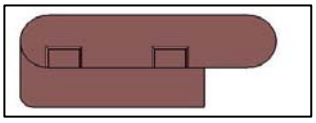


Figure 53 -Change Only Slider

Servicing Medeco^3 Biaxial Mortise Cylinders

Medeco^3 Biaxial Mortise Cylinders

Medeco^3 mortise cylinders meet and exceed ANSI/BHMA A156.5-2001, Auxiliary Locks & Associated Products Grade 1 Listing. Medeco^3 mortise cylinders also meet ANSI/BHMA A156.30-2003, High Security Cylinders standards (M1AAAM).

Medeco mortise cylinders are designed to retrofit into new or existing mortise locksets.

Medeco mortise cylinders are pinned through the pin chamber holes located at the top of the cylinder and an allen set screw secures the pin chamber hole keeping each pin stack within its respective pin chamber. The pin chamber holes are individual capped to make servicing easier and to resists sophisticated picking attacks.

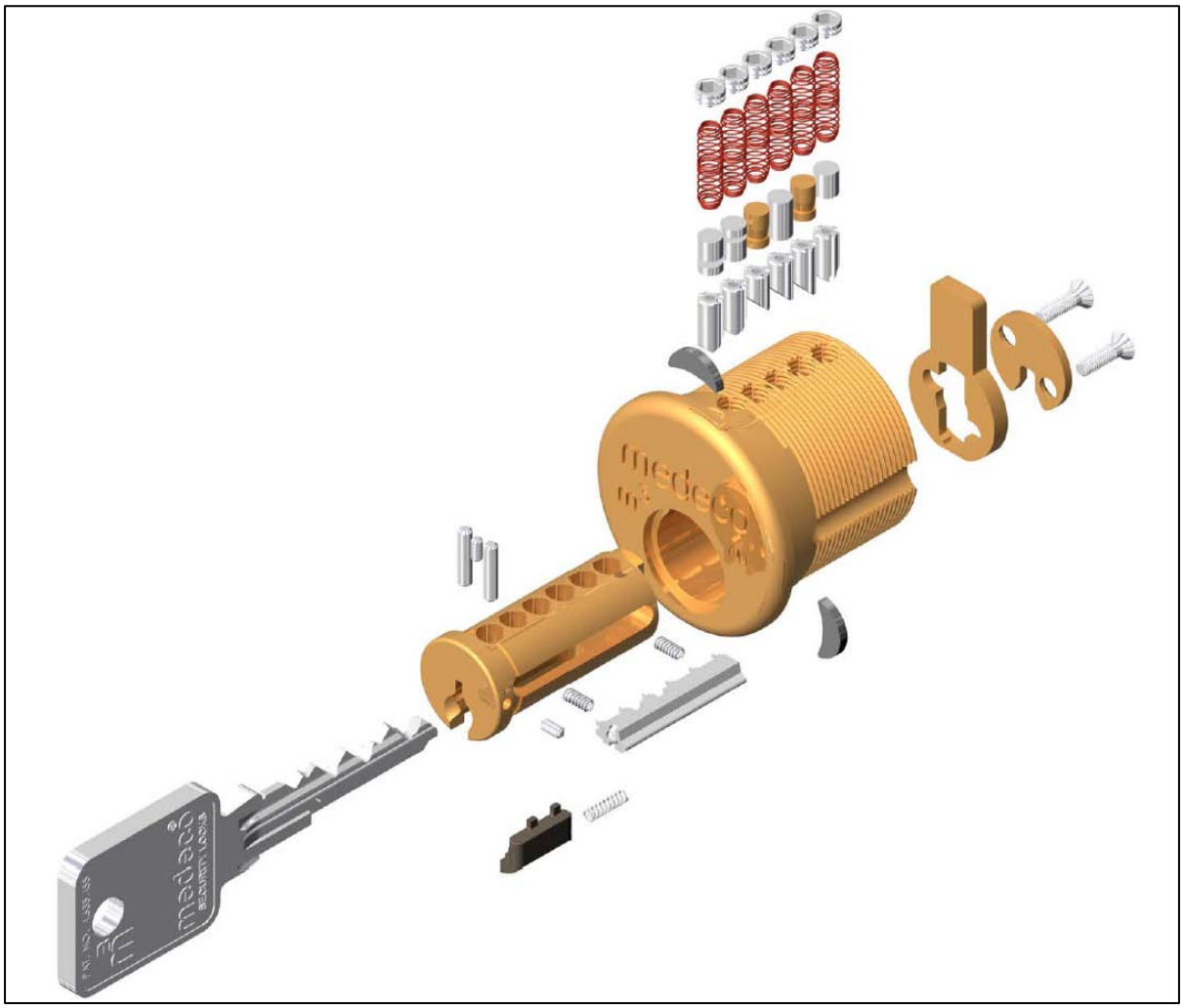


Figure 54 - Medeco^3 Mortise Cylinder – Exploded View

Medeco^3 Biaxial Mortise Cylinder – Disassembly

The disassembly procedures for a Medeco^3 mortise cylinder can quickly and easily be disassembled in the field. However, disassembly is not required when re-keying since the pins can be loaded through the top of the cylinder. These procedures should only be used for cylinder cleaning and component servicing (wear/damage/slider replacement).

Servicing Tools Required:

- Medeco screwdriver or Phillips head screwdriver
- Small flat blade screwdriver
- Cut key, key blank, or probe (pick)
- Tweezers

Step 1: Remove Cam Screws, Cam Washer, and Cam – Figures 55, 56, & 57

Medeco mortise cylinders are equipped with a changeable cam that can be changed quickly and easily in the field to meet the requirements of the application. Before the plug can be removed, the cam screws, the cam washer, and the cam must be removed from the back of the cylinder.



Figures 55, 56, & 57 – Removing cam screws, the cam washer, and the cam

Step 2: Remove Plug – Figure 58

In order to remove the plug, you will need a working key, a key blank, or a probe. If cut keys or key blanks are used, they must contain the proper side bitting for the slider installed in the cylinder. Before the plug can turn, the slider mechanism must be pushed into a position to align its blocking tabs with the gates in the sidebar. Insert your key into the cylinder and turn it 45 degrees. Once the plug is turned, push the plug from the back of the cylinder. You may want to hold your finger over the slider and the sidebar while pulling the plug out. Pull the plug out slowly to prevent losing any of the components.

If a cut key or a key blank is not available, the slider can be pushed inward with a pick or a probe while apply turning force to the plug. This will allow the plug to rotate so that it can be removed from the shell.

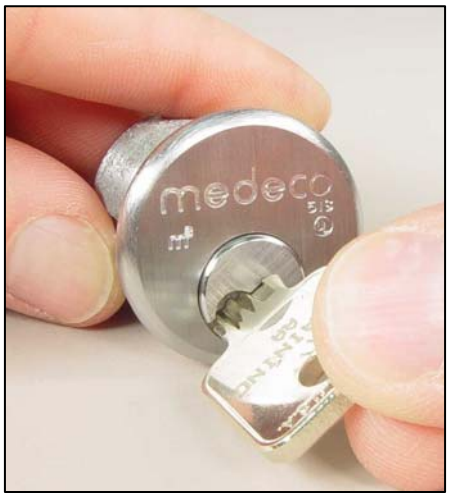


Figure 58 - Key inserted and turned. Plug can now be pulled out.

Step 3: Remove the Hardened Steel Crescent Inserts – Figure 59

After the plug has been removed, the hardened steel crescent inserts can be removed from the shell. Take the shell, holding it at an angle with the face down, and lightly tap it on a hard surface. The hardened steel crescent inserts will fall out of the shell.



Figure 59 - Removing the Hardened Steel Crescent Inserts from the shell.

Step 4: Removing the Slider Mechanism from the Plug– Figure 60

The slider mechanism is located on the bottom of the plug on the right-hand side. Taking a small flat blade screwdriver, gently pry up on the slider mechanism to release it from the pocket and to remove it from the plug. You will also need to remove the slider spring.



Figure 60 – Removing slider from plug

Step 5: Removing Sidebar from Plug – Figure 61

After the slider mechanism is removed from the plug, the sidebar is not ready to come out. Remove the sidebar by turning the plug on its side and tapping gently on table or bench top. The sidebar springs will also need to be removed. The sidebar springs may still be in the sidebar or they may be in the sidebar pocket.



Figure 61 – Removing sidebar and sidebar springs

Please take note that the slider spring and the sidebar springs are of different sizes and are not interchangeable. Also note the location of the springs in the sidebar and the slider. – Figure 62

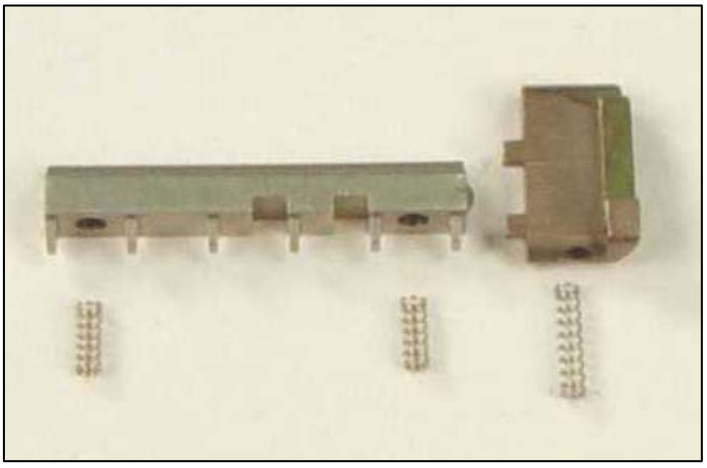


Figure 62 – Sidebar springs and slider spring are different sizes and are not interchangeable.

The disassembly of the Medeco^3 mortise cylinder is complete and the components are now ready to be serviced, cleaned or replaced. Below is an exploded view of a disassembly Medeco^3 mortise cylinder.

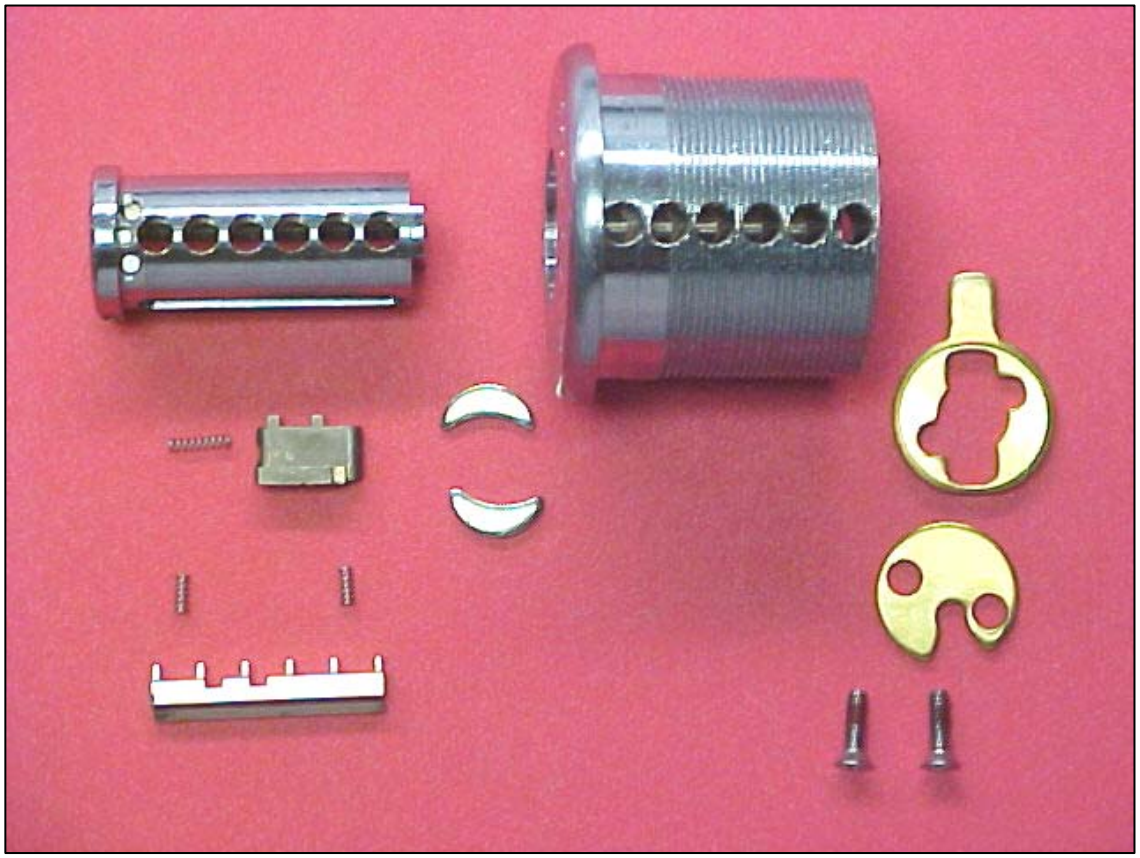


Figure 63 – Disassembled Medeco^3 Mortise Cylinder

Medeco^3 Biaxial Mortise Cylinder - Assembly

Step 1: Insert Hardened Steel Crescents – Figures 64 & 65

Place the shell on its side so that you can look down at the slot cut under the face of the shell. Using tweezers, insert the two hardened steel crescents into their respective slots. Figure 66 shows a hardened steel crescent insert. Install the crescents with the concave side pointing to the hole for the plug. The convex side of the crescent should be pointing toward the shell. You may notice that the crescent is beveled on one side and flat on the other. This makes no difference during installation. The crescent can be installed with the bevel pointing toward the face or with the flat side toward the face. After the hardened steel crescents have been inserted, position the shell upright to keep the crescents from falling out.



Figure 64 – Rotate shell to insert crescents



Figure 65 – Stand shell upright

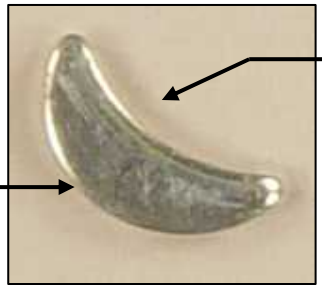


Figure 66 – Hardened Steel Crescent Insert

Step 2: Place Slider Spring in Slider – Figure 67

Place the slider spring into the hole locator on the slider (longer spring).



Figure 67 – Place slider spring in the slider.

Step 3: Insert Slider into Plug

There are two methods to installing the slider in the plug. Both methods are listed below:

Step 3A: Insert Slider into Plug – Spring End First – Figure 68

Insert the slider into the pocket on the bottom of the plug, spring end first. There is a ledge along the back side of the pocket for the slider spring to rest on. Make sure that the spring is not sitting down below the ledge.

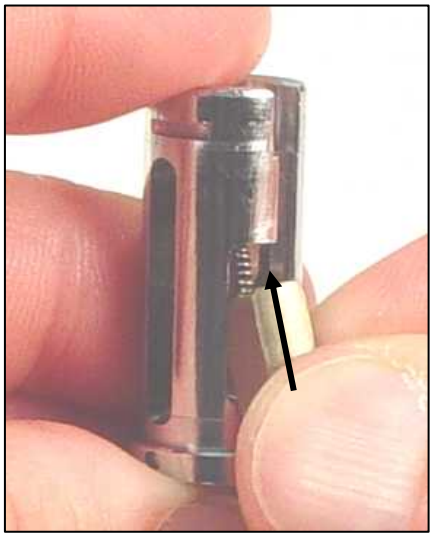


Figure 68 – Installing slider into plug, spring end first.

Step 3B: Insert Slider into Plug – Spring Resting on Plug – Figure 69 & 70

Install the slider into the plug by inserting the non-spring side of the slider first with the spring resting on the plug. Once the non-spring side is seating in the pocket, the spring can be compressed and lowered into its position in the slider pocket. There is a ledge along the back side of the pocket for the slider spring to rest on. Make sure that the spring is not sitting down below the ledge.

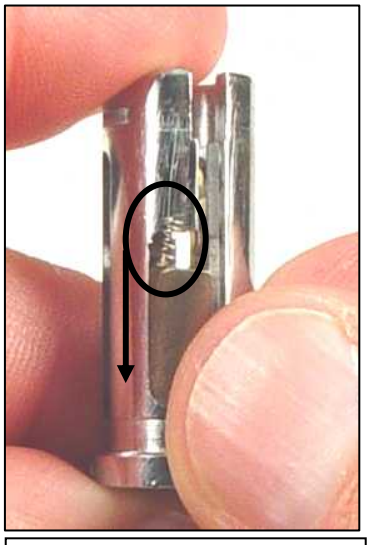


Figure 69 – Installing non-spring



Figure 70 – Depressing spring to seat

Step 4: Test Slider – Figure 71

After the slider mechanism is installed in the slider pocket, test the slider to make sure it has the proper amount of spring tension. This can be done by taking a small flat blade screwdriver and pushing the slider mechanism toward the back of the plug. The slider should seat flush with the back side of the pocket. If you find that the slider is not moving smoothly or is not seating flush with the back of the pocket, complete step 4 of the disassembly instructions and then reinstall the slider and slider springs (step 3 in reassembly instructions).

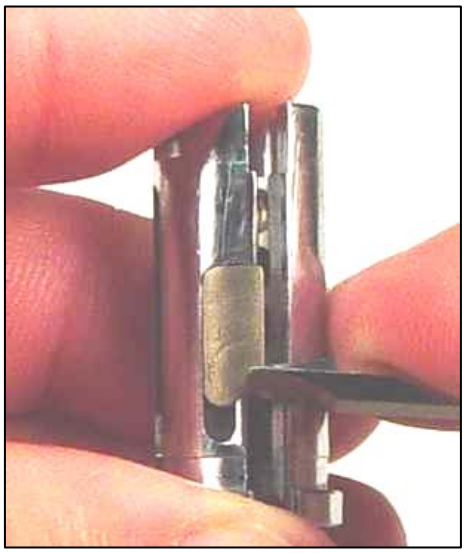


Figure 71 – Testing slider mechanism.

Step 5: Installing the Sidebar – Figures 72 & 73

After the slider mechanism has been installed, we can install the sidebar. Place the sidebar springs (shorter springs) in the holes located at each end of the sidebar (Figure 72). Place your finger over the slider mechanism in the plug to keep it from falling out. While holding the sidebar horizontally, with the sidebar springs pointing up, place the plug over the top of the sidebar. The plug will have to be rotated so that the sidebar pocket is pointing down. Also note that the hardened steel ball bearing in the face of the sidebar should be positioned toward the face of the plug. The sidebar will not go into the plug all the way until a key is inserted.

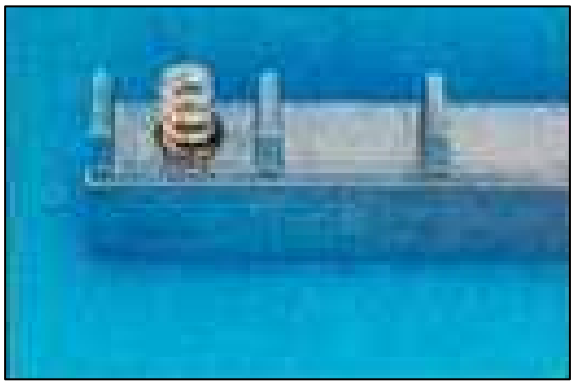


Figure 72 – Sidebar Spring Installed



Figure 73 – Plug over sidebar, ball bearing toward face.

Step 6: Insert Key into Plug – Figure 74 & 75

Before we can insert the plug back into the shell, a key will need to be inserted into the plug. With no key in the plug, the blocking tabs of the slider are blocking the sidebar from being pushed in. In this state, the plug will not be able to be inserted.

While inserting the key, hold your finger over the slider to prevent it from popping out. After the key is fully inserted into the plug, push in on the sidebar. If the sidebar does not push in, you may be using a key with the wrong side bitting, you may have installed the wrong slider, or the sidebar springs may have tipped.

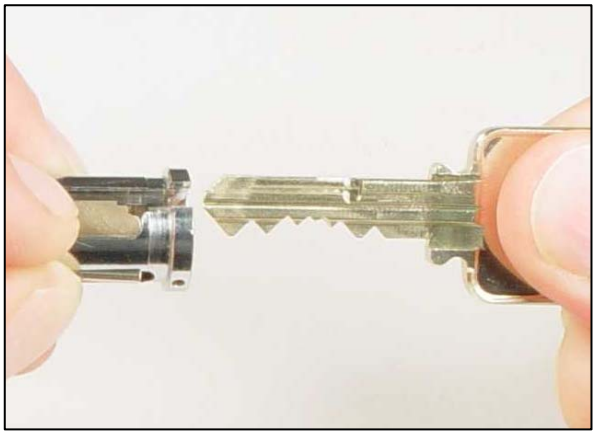


Figure 74 – While holding your finger over the slider, insert a working key.

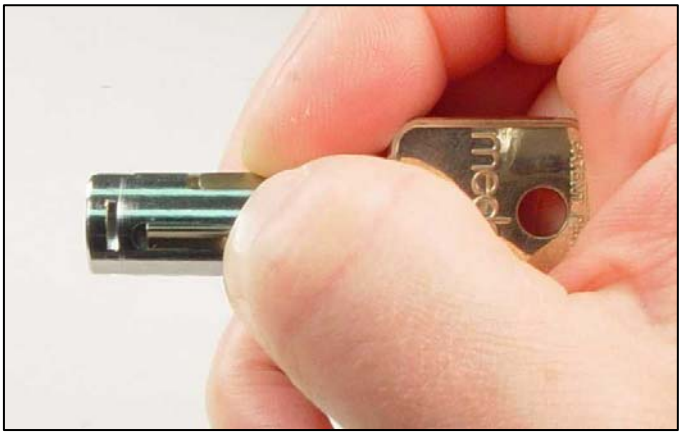


Figure 75 – With key inserted, press in on the sidebar.

Step 7: Inserting the Plug into the Shell – Figure 76

In order to insert the plug into the shell, push the key in all the way while also pushing in on the sidebar. This process is made easier by standing the shell upright while inserting the plug from the top rather than the side.



Figure 76 – Insert plug into the shell with the key inserted fully while depressing sidebar.

Step 8: Installing Cam, Cam Washer, and Cam Screws – Figure 77

Once the plug has been fully inserted into the plug, the cam, the cam washer, and the cam screws can be reinstalled. The figure below shows the proper way to install the cam and cam washer and also illustrates the incorrect way. The back of the cam should be flush with the back of the shell and the cam washer hole should be in line with the keyway (not covering it).

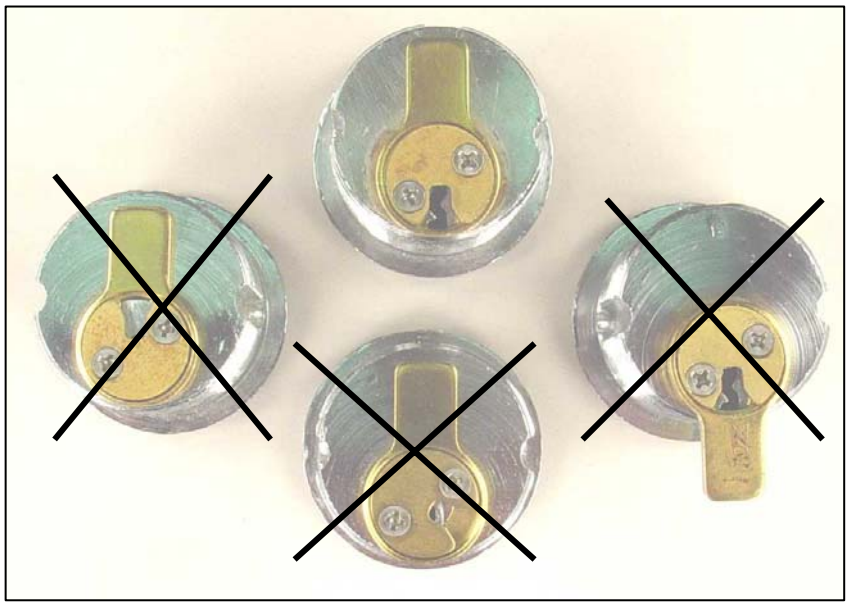


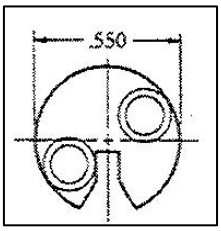
Figure 77 – Installing cam, cam washer, and the cam screws.

Please note: On 5 pin Medeco[3] mortise cylinders, the cam screw located on the left side (looking from the back of the cylinder) will be shorter than the one on the right. The left cam screw is shorter so that it will not interfere with the slider mechanism. The shorter cam screw should be installed in the 7 o'clock position on the cam washer.

The Medeco[3] mortise cylinder is now completely reassembled and is ready to be pinned.

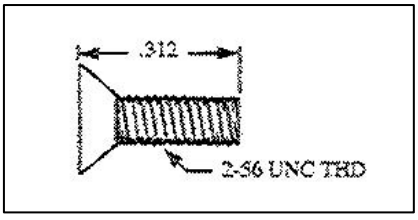
Part numbers for the cam washer and the cam screws are below.

Cam Washer



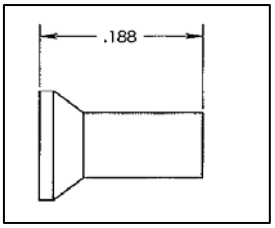
CP-021011

Cam Screws (6 pin cylinders)



CP-010203-050

Cam Screws (5 pin, 1 inch mortise cylinder)



CP-010203-030

Pinning Medeco^3 Biaxial Mortise Cylinders

Medeco^3 mortise cylinders are pinned in much of the same manner as standard pin tumbler cylinders; however, Medeco mortise cylinder are top loaded and do not require a plug follower. Medeco^3 mortise cylinders are pinned from bow to tip (cylinder face to cam). Keep the following information in mind when pinning Medeco^3 mortise cylinders:

- Mushroom top pins should be inserted with the cap pointing down toward the bottom pin
- If possible, two mushroom top pins should be used in each cylinder. The mushroom pins provide additional pick resistance
- Two hardened steel top pins should be used in each cylinder. These pins provide additional drill resistance

Pinning Tools Required:

- Pinning kit **– K-5001 (Large Pinning Kit), K-5005 (Small Pinning Kit)**
- Cylinder holding fixture (optional) **– CP-282451**
- Medeco screwdriver or 5/64" allen wrench
- Key decoder **- 940032**
- Medeco KeyLube 2.0 – **PX-KYLUB2-03**
- Tweezers (optional)

Step 1:

Determine the pinning of the cylinder. This can be accomplished by decoding a key, decoding a blind code, or referencing the pinning from a bitting list.

Step 2: Figure 78

Load the cylinder into the holding fixture.



Figure 78

Step 3 – Figure 79

Secure the cylinder in the holding fixture by tightening the cylinder set screw located on the side of the holding fixture.

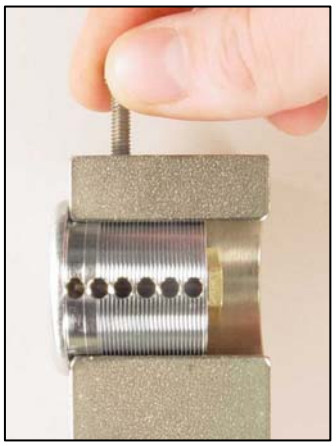


Figure 79

Step 4 – Figure 80

Insert the key that the cylinder is to be pinned to. You will use this key to test the cylinder pinning as each pin chamber is loaded.

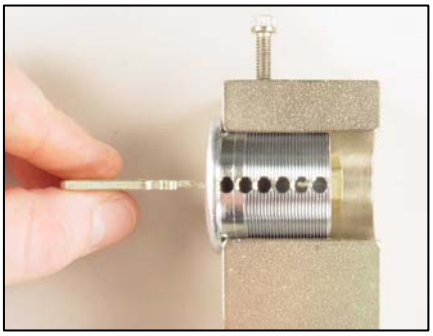


Figure 80

Step 5 – Figure 81

Select the proper bottom pin from your keying chart or bitting list and load it into the cylinder. Place the pin over the pin chamber with the locator tab on the pin directly over the locator tab slot in the pin chamber hole. **Do not force the pin into the pin chamber. If the locator tab is not aligned with the locator tab slot, rotate the pin until both are aligned.** Test the key after each bottom pin is inserted.

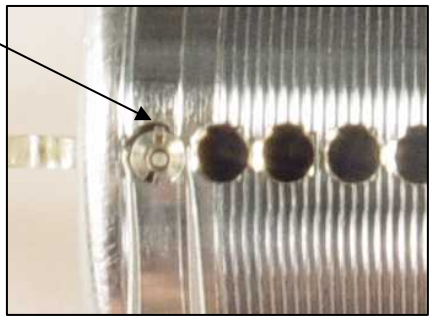


Figure 81

If the key does not rotate the plug, the pin may not be fully seated on the cut of the key. Lightly press down on the pin to seat it on the key. **CAUTION: Only push down on the pin if you are sure that the locator tab on the pin is aligned with the locator tab slot in the pin chamber hole.**

If the key still does not turn it is likely that the improper pin was used. Extract the pin and use the correct one. Check your pinning kit and the pinning information. If you are unsure of the pin you are using, reference the "***Medeco^3 Biaxial Pin Specification***" section of this manual to decode the pin.

Step 6 – Figure 82

Load the corresponding top pin. The required top pin number will match the corresponding bottom pin number. This is necessary to maintain a consistent pin stack height within the pin chamber. An example of this would be a number 5 length bottom pin with a number 5 driver on top.

If you are master pinning this cylinder, load the master pins in the cylinder before the top pins. In a master keyed situation, the top pin number will be a number that equals the total of the bottom pin and the master wafer added together.

If you are using a mushroom driver, make sure the cap is pointing down toward the bottom pin.

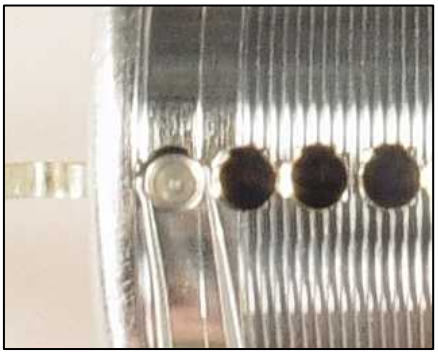


Figure 82

Step 7 – Figure 83

After the top pin is loaded, test the key to ensure that it operates. If the cylinder is master pinned, test all keys that were designed to operate this cylinder.

If the key works, repeat step 5 – 7 for the remaining pin chambers until all pin chambers are loaded with the necessary bottom and top pins.

If the key does not work, recheck the pins used in that pin chamber.

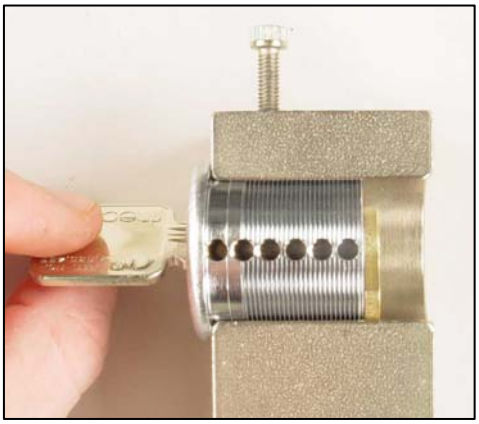


Figure 83

Step 8 – Figure 84

Once all of the pin chambers have been loaded with the proper bottom and top pins and the cylinder has been tested with a key, slowly remove the key. Load the tumbler springs.

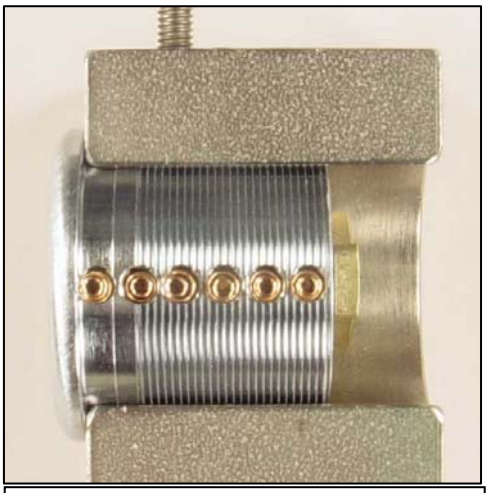


Figure 84

Step 9 – Figure 85

Once the tumbler springs have been loaded, you can now begin to cap each pin chamber. A 5/64” allen wrench is required to secure the allen set screws in each pin chamber. Be sure not to over tighten the allen set screws. The set screws should be lightly snug and be deep enough to clear the mortise cylinder threads. If the set screws are over tightened they may be difficult to remove. This may also cause too much pressure on the pin stack and the cylinder will be difficult to operate. Once the allen set screws are secured into place, the cylinder can be removed from the holding fixture. The cylinder is now ready for installation. It is not necessary to use Lok-tite on the allen set screws.

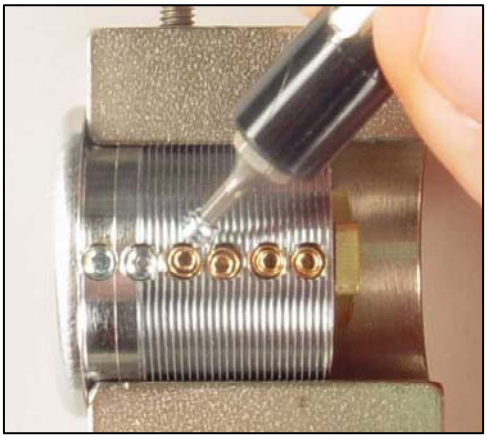


Figure 85

Servicing Medeco³ BiLevel Mortise Cylinders

BiLevel Overview

BiLevel cylinders operate much like a standard pin tumbler lock, with the addition of a slider and legless sidebar for additional protection against picking, key interchange, and increased master keying capability.

BiLevel cylinders ***do not meet*** UL437 or ANSI/BHMA A156.30 high security standards and are meant to be used in applications where physical security is not critical. (Some examples are: interior stairwells, restrooms, hallways)

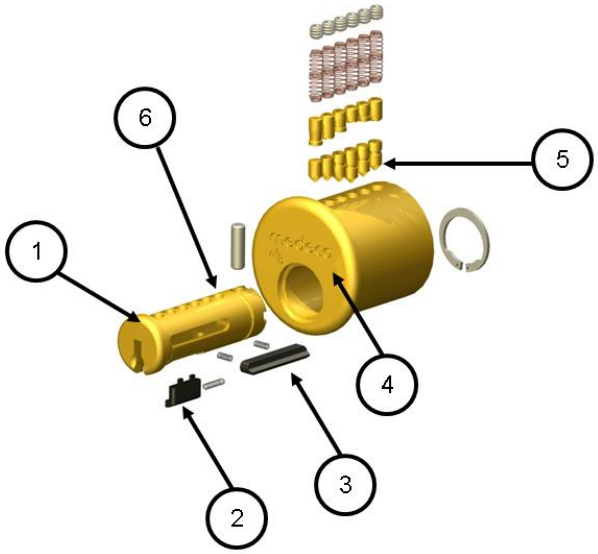


Medeco³ High Security Cylinder



BiLevel Cylinder

The markings on the cylinder face differ from Medeco³ cylinders in that they have no UL logo, and contain the Medeco³ BiLevel logo.

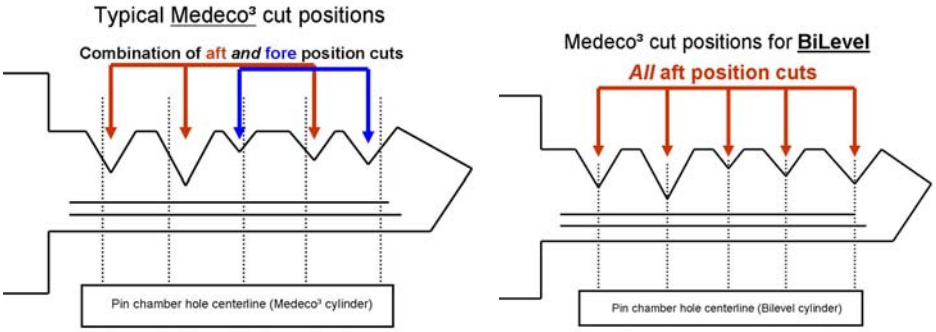


1. **Plug** - The BiLevel cylinder's plug is the same high quality, all brass machined construction as its Medeco³ cousin, without any hardened steel drill-resistant inserts. The plugs are available in all existing Medeco³ keyways.
2. **Slider** - The BiLevel slider mechanism is the same dimensionally as the Medeco³ slider, but is made of zinc.
3. **Sidebar** - The BiLevel sidebar differs significantly from the one found in the Medeco³ cylinder. Made of zinc, it has no sidebar legs, and no hardened steel drill resistant ball-bearing insert.
4. **Shell** - Like the plug, the BiLevel shell is machined brass. There are no millings in the plug face for hardened steel crescents. The shell also carries the M3B BiLevel logo so it can be easily identified as such. Since the cylinders are not UL listed, there is no UL437 logo.
5. **Pins** - Unlike the chisel-pointed pins found in the Medeco³ high security cylinders, BiLevel bottom pins are conical. BiLevel pins are made of brass and plated with nickel silver for durability.
6. **Pin Chamber Holes** - The BiLevel plugs, and shells have no locator tab slots, which means their parts can not be interchanged with Medeco³ high security cylinders.

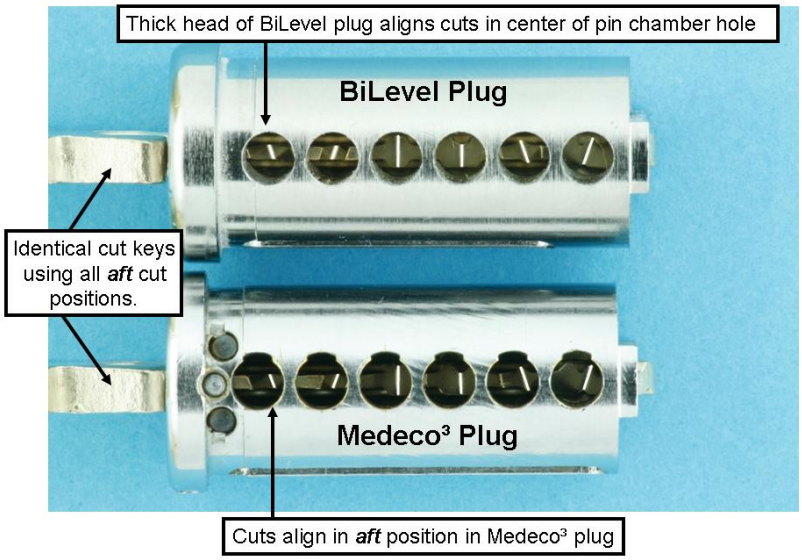
BiLevel products are available in all current Medeco³ keyways, and can only be operated by using Medeco³ keys. 60 Series cylinders (camlocks, switchlocks, furniture locks) as well as European Profile Cylinders are not available in BiLevel versions. There are no BiLevel-specific keyways, key blanks or cut keys. Since the Medeco³ keys used to operate BiLevel cylinders must also operate Medeco³ cylinders, the keys will have angled cuts. However, BiLevel uses the cut depths to reach the plug shear line, and the side milling on the key to engage slider mechanism, but do not use the cut angles. BiLevel pins rest on the sides of the key cuts just as the high security pins do for added wear resistance and precision.

Keying Specifications

The keys used in a BiLevel application must be cut using all *aft* position cuts in order for the spacing to be correct in the BiLevel cylinder. Because of this fact, master key systems, and individual key codes must be specifically ordered for the BiLevel application. Existing Medeco³ master key systems (that do not use all aft position cuts) and key codes are not compatible with BiLevel's all-aft position requirement.



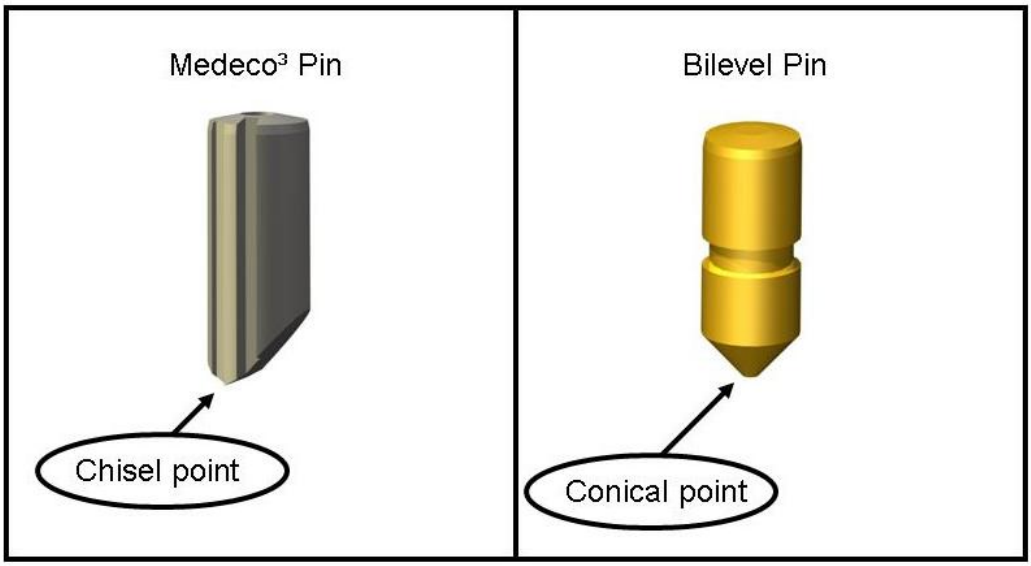
A thicker head on the BiLevel plug does not allow the Medeco³ cut key to enter as far into the BiLevel plug as it does a Medeco³ plug.



This allows the aft position cuts on the key to line up with the center of the pin chamber holes in a BiLevel cylinder, and in the aft position in the Medeco³ cylinder. The shoulder-to-first-cut spacing for a Medeco³ key cut to operate BiLevel cylinder is .275. Cut-to-cut spacing is .170.

Pin Specifications

BiLevel and Medeco³ bottom pins share the same .135" diameter, .025" pinning increment and brass construction, but are otherwise completely different. The most obvious distinction lies in the shape; Medeco³ bottom pin tips are chisel-pointed and BiLevel pin tips are conical.

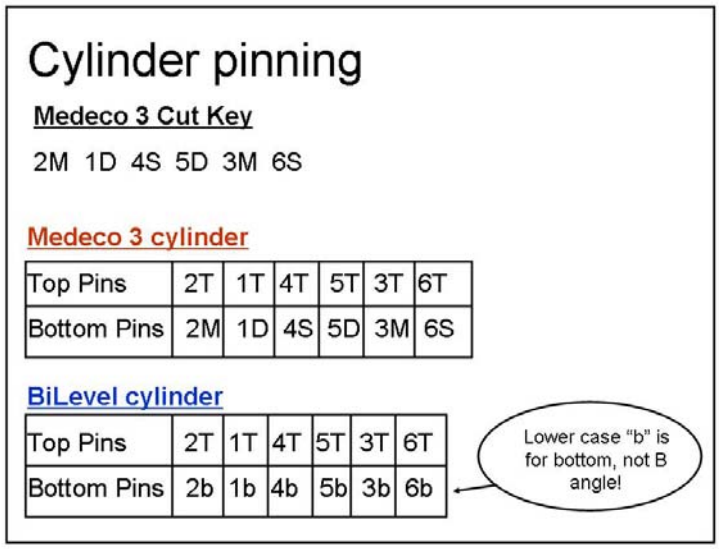


BiLevel bottom pins are nickel plated for durability just like Medeco³ pins, but are also oxidized to give them a unique dark color. This allows them to be easily distinguished from standard Medeco pins and other common-looking bottom pins. BiLevel bottom pins are also different in that they do not have a sidebar slot like their Medeco³ counterparts since they do not need to rotate to

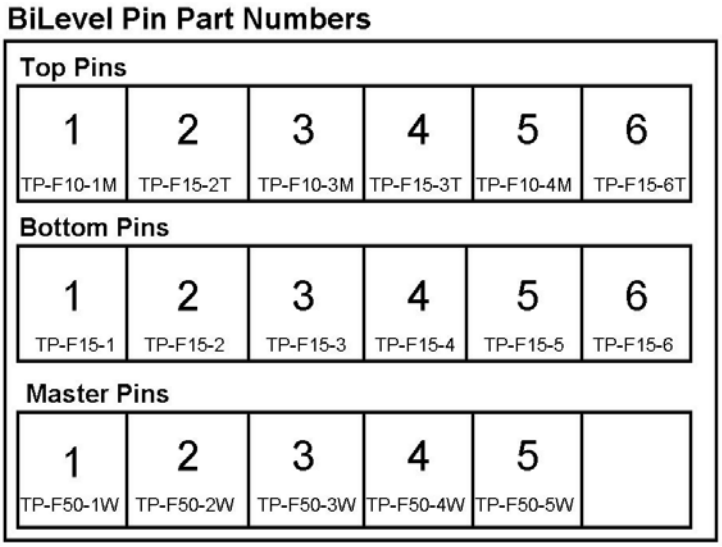
accept sidebar legs. Select bottom and top pins are spooled for added pick resistance: numbers 1, 3, and 5 top pins, and numbers 3, 4, 5, and 6 bottom pins.

Cylinder Pinning

Keying a BiLevel cylinder alike to a Medeco³ cylinder is a snap. As mentioned before, you must start with a key code with all aft position cuts that is specifically created to support BiLevel. (Both individual codes and master key systems for BiLevel are available from the Medeco factory) The key code will contain both numbers (cut depths) and letters (cut angles). The cut depth numbers are all that are necessary to choose the correct BiLevel pins. For example, if your key cut is a 2M, you would choose a #2 bottom pin. Top pins are numbered so that they correspond with the bottom pin numbers – a #2 bottom pin gets a #2 top pin.



Master keying BiLevel is also quite easy. For example, if your master key is cut to a 2M and your change key is a 4M, select a #2 bottom pin, add a #2 wafer, and top it off with a #4 top pin.



A pin kit is available that contains 100 of each of the bottom, master and top pins, plus set screws and springs. The pin kit part number is KJ1501.

Cylinder Part Numbering

The part numbering scheme for BiLevel is consistent with other Medeco product lines, but the letter "J" is used after the first two digits in the part number to designate a BiLevel product. *Example:* A six pin 1 1/8" mortise cylinder would be 10**J**0200-XX-XXX

Component Parts

BiLevel Sidebar CP-083551 (Same for 5 and 6 pin cylinders)

BiLevel Slider CP-083591

Medeco^3 Cylinder Lubrication

Medeco® KeyLube™ 2.0

Medeco recommends that Medeco KeyLube 2.0 is used to lubricate Medeco^3 Biaxial cylinders and interchangeable cores. KeyLube 2.0 is a quick, invasive and long lasting lubricant that provides lubricity up to 10 times longer than other lubricants when used in high-use locking devices. Medeco KeyLube 2.0 contains an advanced metal treatment which is superior to graphite, PTFE, Silicone, Molybdenum or Synthetic lubricants.



Figure 86

KeyLube 2.0 is a unique petroleum based product that, through an electromechanical process, disperses into tight fitting areas, leaving an ultra thin coating on the inside components of Medeco products. Keylube 2.0 burrows under condensation and moisture driving it to the surface allowing it to dry quickly. This also eliminates oxidation problems.

KeyLube 2.0 utilizes an electromechanical surface bonding technique to eject contaminants by causing a dipole-dipole interaction exchange on metal surfaces. This process creates a greater positive charge on the metal surface which react with positive charged airborne contaminants and causes a repulsion between the two.

Other Lubricants

Medeco also recommends two other types of lubricants to use when servicing Medeco cylinders and interchangeable cores. The two approved lubricants for Medeco products are listed below:

Sandstrom® Poxylube® CP-200 Air Drying Solid Film Lubricant

Poxylube CP-200 (4.5 oz.) Aerosol can with spray tube

Synco® Super Lube® Dri-Film Lubricant

Super Lube Dri-Film (11 oz.) Aerosol can with spray tube

Lubricants not listed above will void the Medeco cylinder warranty. Medeco is not responsible for damage to the lock caused by foreign matter other than Medeco approved lubricants or by accident, theft, misuse, abuse, or abnormal use or conditions.

How to Lubricate:

No other lubricants should be used with Medeco Key Lube. Locks that are dirty or oily should be cleaned with an electrical contact cleaner such as the one made by LPS or those available at Radio Shack stores. Extremely dirty or oily locks may have to be completely disassembled as part of the cleaning procedure. It is recommended that only Medeco Factory Certified Locksmiths take apart Medeco cylinders.

- ✓ Shake can well and with opening on white nozzle pointing away from face, insert the red plastic spray tube into the end of the white nozzle.
- ✓ Place the red plastic spray tube against the keyhole and press down on the white nozzle using three, one second bursts of spray.
- ✓ Allow the lubricant to penetrate the cylinder 10 seconds before inserting the key. Wipe the face of the cylinder with a rag if over-spray coats the face of the lock.
- ✓ It is also recommend to lubricate or clean the area within which the sidebar is located when the plug is at rest (locked). Debris can build-up in this area and can cause intermittent operation or a lockout. To clean this area, insert key and turn 90 degrees clockwise. Using the red plastic spray tune, spray lubricant into the keyway as close as you can to the top shoulder of the key. This will lubricate and clean the sidebar slot located on the inside surface of the shell where the sidebar slot is milled.

How Often to Lubricate:

Frequency of lubrication depends on location of the cylinder, weather conditions and amount of use. A lock installed on an interior door that is only used a couple times a day should be lubricated once a year. A lock installed on the exterior entrance door of an apartment with several hundred tenants and freezing weather conditions should be lubricated at least 4 times a year or anytime the key is difficult to insert or turn.



Figure 87

Common Questions and Answers regarding Medeco's KeyLube™ 2.0 Lubricant

How much KeyLube™ 2.0 lubricant should I use when lubricating a lock?

Because of the aggressive migrating nature of KeyLube™ 2.0 lubricant, and its high concentration, you only need a very short burst of spray into the lock for sufficient lubrication.

Is KeyLube™ 2.0 lubricant available in different sizes?

Currently KeyLube™ 2.0 lubricant is only available in the 3 oz. size.

How long does KeyLube™ 2.0 lubricant last?

KeyLube ™2.0 lubricant has been cycle tested to last 10 times longer than many popular lubricants, including the original KeyLube.

Will extreme temperatures have any affect on the performance of KeyLube™ 2.0 lubricant?

KeyLube™ 2.0 Lubricant has been tested for temperatures ranging from –40 to + 140 degrees (Fahrenheit) with no degradation in its lubricity.

How can I get a Material Safety data Sheet for KeyLube™ 2.0 Lubricant?

A MSDS (Material Safety Data Sheet) can be found at the end of this section.

I live in a very moist environment. Will KeyLube™ 2.0 lubricant work?

Yes! KeyLube™ 2.0 lubricant aggressively displaces moistures, and leaves a micro-thin, dirt repelling, protective coating to guard against corrosive elements.

KeyLube™ 2.0 lubricant feels " wet," can that cause any problems?

Many "wet" lubricants attract dirt or dust, or become gummy over time. KeyLube™ 2.0 is a unique petroleum based product that disperses quickly, leaving an ultrathin, non-gummy film on the metal surfaces for long-lasting lubricity. Because of the unique nature of the product, this film actually repels dirt unlike many other lubricants.

What happens if I use KeyLube™ 2.0 lubricant on installed locks that may have other lubricants in them?

KeyLube™ 2.0 lubricant has been tested with most of the common lubricants used today by locksmiths, including the original KeyLube™ lubricants. In all of our tests, KeyLube™ 2.0 provided superior lubrication regardless of whether or not other lubricants were introduced.

Regardless of which lubricant I use, Medeco locks still " click" at the twelve o' clock position – is that normal?

Yes! The click you hear when the key arrives at the twelve o' clock position is the sidebar snapping into the detent in the cylinder wall. It is not only perfectly normal, but is a subtle reminder of the superior double locking mechanism in Medeco locks.

Will KeyLube™ 2.0 lubricant damage painted doors or finishes?

KeyLube™ 2.0 lubricant is safe on most surfaces. If you are unsure about a particular finish, simply test the spray on an inconspicuous area of the door or lock first. (Note: Use extreme care when using KeyLube™ 2.0 lubricant or any lubricant on US10B/613 Satin bronze finish)

Where to Order Lubricants:

Medeco KeyLube 2.0
Medeco Customer Service 1-800-839-3157 or Authorized Medeco Distributor

Poxylube CP-200
http://www.sandstromproducts.com or 1-800-747-1084

Super Lube Dri-Film
http://www.super-lube.com or 1-800-253-LUBE (5823)

Appendix:

Medeco Original, Biaxial, and Medeco^3 Key Control Programs Summary

The security of any locking system is dependent upon two very important factors. The first of these is its physical strength against picking, drilling, and forcing. The second is the controlled duplication of existing keys for that lock or locking system. Historically, unauthorized key duplication has played a major role in compromising even the most sophisticated security systems.

Medeco has eliminated unauthorized duplication of keys by doing three things:

1. Medeco manufacturers cylinders which use keys that must be made on special key cutting machines or key machines equipped with special key clamps/vise assemblies. These machines must be capable of reproducing the angles cuts and critical tolerances necessary to produce a workable key.
2. Medeco sells its high quality, precision machined cylinders and locks only to professional security industries such as locksmiths, locksmith distributors, and contract hardware suppliers. Every Medeco key blank is marked with its name to identify it as an authorized key blank that will work properly in Medeco products and give long product life.
3. Medeco has successfully litigated its right to protect against unauthorized manufacture and distribution of its restricted key blanks.

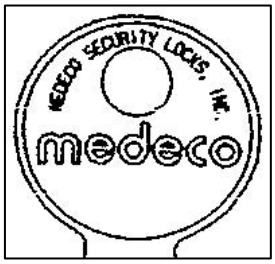
Medeco has developed and maintained several types of key control programs to meet the various needs of locksmiths and their end-users. The key control programs offered by Medeco are described in detail in the following pages:

Medeco Original Product Key Control Programs

Original Commercial Program

Program Details

Bow Size: **10 Bow**
Coining Available: **N/A**
Bow Shape: **Round Head**
Logo: **N/A**



Original Commercial Key
10 Bow – Round Head

Program Description:

Original Commercial program is designed for consumers who wish to have keys made with minimum delay and are looking for a drill and pick resistant cylinder. Qualified locksmiths with a key machine capable of producing keys with angled cuts can duplicate Medeco Original Commercial product keys. The Original Commerical program does not require authorization from the end-user to order to reproduce cut keys.

Type of Authorization Required:

None

Contract required:	Not required
Buy-In:	N/A
Contract between:	N/A
Medeco key machine required:	No
Key blanks sold to:	Not restricted
Key blanks shipped to:	Not restricted
Key blanks can be stock by:	Locksmith dealer/distributor
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer/distributor
Who can process a cut key order:	Locksmith dealer/distributor
Processing cut key orders:	Not restricted, no authorization required
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/distributor

Original SKY Distributor Program

Program Details

Bow Size:	**15 Bow**
Coining Available:	**N/A**
Bow Shape:	**Bell Shape**
Logo:	**N/A**



Original SKY Key
15 Bow – Bell Shape

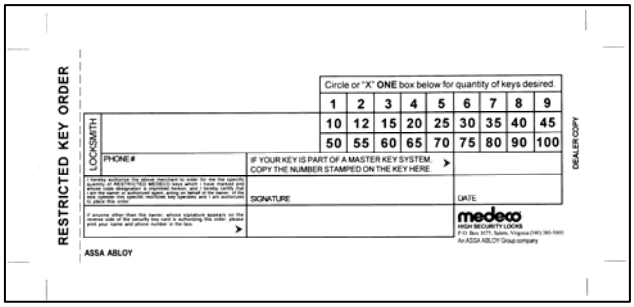
Program Description:

The Original SKY key control program requires positive identification for key duplication in the form of a Black & White Authorization Card. Authorization cards are supplied with each cylinder when shipped from the factory. In order for an end-user to obtain additional SKY cut keys, the end-user must present their authorization card to a participating locksmith. The locksmith will then fill out a restricted key order form (voucher) along with the number of keys desired and the authorized cardholder's signature. The restricted key order form is then sent via mail or through fax (Faxable Voucher Program Distributors Only) to an authorized distributor. If the restricted key order form is properly filled out, the distributor will in turn process the key request and supply the locksmith with the SKY cut keys. The locksmith can then present the end-user with the cut keys. Key blanks are only sold to authorized SKY distributors. Locksmith cannot cut SKY keys. **Authorization card is not tracked electronically.**

Type of Authorization Required:



SKY Authorization Card



Restricted Key Order Form (Voucher)

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco and Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Distributor only
Key blanks shipped to:	Distributor only
Key blanks can be stock by:	Distributor only
Key blanks can be ordered from:	Medeco
Key blanks can be cut by:	Medeco and Distributor only
Who can process a cut key order:	Locksmith dealer/Distributor
Processing cut key orders:	Authorization card and voucher
Replenishment key blank orders can be ordered through:	Medeco only
Product can be stocked by:	Locksmith dealer/Distributor

Medeco Biaxial Product Key Control Programs

Biaxial Commercial Program

Program Details

Bow Size: **10 Bow**
Coining Available: **N/A**
Bow Shape: **Round Head**
Logo: **Biaxial Logo**



Biaxial Commercial Key
10 Bow – Round Head

Program Description:

The Biaxial Commercial program is designed for consumers who wish to have keys made with minimum delay. Qualified locksmiths with a key machine capable of producing keys with angled cuts can duplicate Medeco Biaxial Commercial product keys. The Biaxial Commercial program does not require authorization from the end-user to order to reproduce cut keys.

Type of Authorization Required:

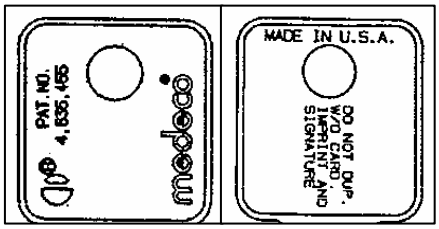
None

Contract required:	No
Buy-In:	N/A
Contract between:	N/A
Medeco key machine required:	No
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	Locksmith dealer/Distributor
Key blanks can be stock by:	Locksmith dealer/Distributor
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer/Distributor
Who can process a cut key order:	Locksmith dealer/Distributor
Processing cut key orders:	Not restricted, no authorization required
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco Biaxial GLD (Gold) Distributor Program

Program Details

Bow Size:	**12 Bow**
Coining Available:	**N/A**
Bow Shape:	**Small Rectangle Shape**
Logo:	**Biaxial Logo**



Biaxial GLD Key
12 Bow – Rectangle Shape

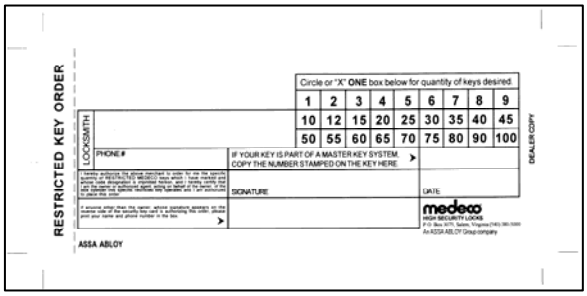
Program Description:

The Biaxial GLD key control program requires positive identification for key duplication in the form of a Black & Gold Authorization Card. Authorization cards are supplied with each cylinder when shipped from the factory. In order for an end-user to obtain additional GLD cut keys, the end-user must present their authorization card to a participating locksmith. The locksmith will then fill out a restricted key order form (voucher) along with the number of keys desired and the authorized cardholder's signature. The restricted key order form is then sent via mail or through fax (Faxable Voucher Program Distributors Only) to an authorized distributor. If the restricted key order form is properly filled out, the distributor will in turn process the key request and supply the locksmith with the GLD cut keys. The locksmith can then present the end-user with the cut keys. Key blanks are only sold to authorized GLD distributors. Locksmith cannot cut GLD keys. The GLD Program is a nationwide program.

Type of Authorization Required:



GLD Authorization Card



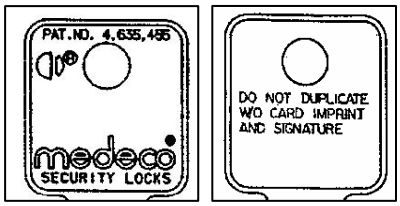
Restricted Key Order Form (Voucher)

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco and Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Distributor only
Key blanks shipped to:	Distributor only
Key blanks can be stock by:	Distributor only
Key blanks can be ordered from:	Medeco only
Key blanks can be cut by:	Medeco or authorized distributor
Who can process a cut key order:	Locksmith dealer/Distributor/Medeco
Processing cut key orders:	Authorization card and voucher
Replenishment key blank orders can be ordered through:	Medeco only
Product can be stocked by:	Locksmith dealer/Distributor

Medeco Biaxial NUK (Platinum) Distributor Program

Program Details

Bow Size: **12 Bow**
Coining Available: **N/A**
Bow Shape: **Small Rectangle Shape**
Logo: **Biaxial Logo**



Biaxial NUK Key
12 Bow – Rectangle Shape

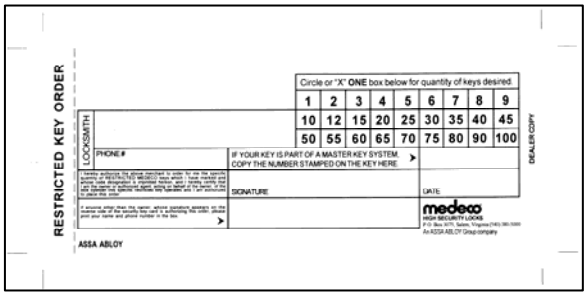
Program Description:

The Biaxial NUK key control program requires positive identification for key duplication in the form of a Silver Authorization Card. Authorization cards are supplied with each cylinder when shipped from the factory. In order for an end-user to obtain additional NUK cut keys, the end-user must present their authorization card to a participating locksmith. The locksmith will then fill out a restricted key order form (voucher) along with the number of keys desired and the authorized cardholder's signature. The restricted key order form is then sent via mail or through fax (Faxable Voucher Program Distributors Only) to an authorized distributor. If the restricted key order form is properly filled out, the distributor will in turn process the key request and supply the locksmith with the NUK cut keys. The locksmith can then present the end-user with the cut keys. Key blanks are only sold to authorized NUK distributors. Locksmith cannot cut NUK keys. **Authorization card is not tracked electronically. The NUK program is exclusive to the New York Territory.**

Type of Authorization Required:



NUK Authorization Card



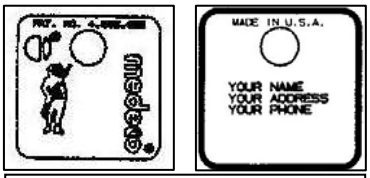
Restricted Key Order Form (Voucher)

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco and Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Distributor only
Key blanks shipped to:	Distributor only
Key blanks can be stock by:	Distributor only
Key blanks can be ordered from:	Medeco only
Key blanks can be cut by:	Distributor only
Who can process a cut key order:	Locksmith dealer/Distributor
Processing cut key orders:	Authorization card and voucher
Replenishment key blank orders can be ordered through:	Medeco only
Product can be stocked by:	Locksmith dealer/Distributor

Medeco Biaxial Patriot Program

Program Details

Bow Size:	**17 Bow**
Coining Available:	**N/A**
Bow Shape:	**Large Square Bow**
Logo:	**Biaxial Logo/Patriot Shoulder**



Biaxial – Patriot Key
17 Bow- Large Square Bow

Type of Authorization Required:

Program Description:

The Patriot Program was originally developed in 1991 to take advantage of the benefits of electronic key management. The Patriot Program utilizes computerized communications between the locksmith's location and the Medeco factory to facility cutting Biaxial Patriot keys. In order to receive additional cut keys, the end-user must present their authorization card to a participating Patriot dealer. After the locksmith has verified the identity of the individual and has deemed them authorized to request additional cut keys, the locksmith will swipe the authorization card through a card reader. The card reader is specific to the individual dealer and is used in conjunction with a receipt printer. The card reader will connect with the host server, located at the Medeco factory, and will verify the contents of the authorization card. If the information on the authorization card is valid, the host server will send the bitting information for the authorization card back to the locksmith in the form of a two-ply receipt. Patriot authorization cards are tracked electronically and an audit trail of the keys for a end-users system is generated each time a key is cut. The Patriot program is a nationwide program.



Patriot Authorization Card



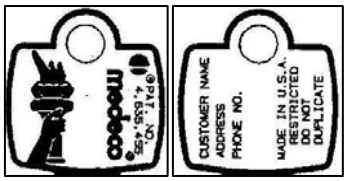
Card Reader and Receipt Printer

Contract required:	Yes
Buy-In:	$1500
Contract between:	Medeco and Locksmith dealer
Medeco key machine required:	No
Key blanks sold to:	Locksmith/Distributor only
Key blanks shipped to:	Locksmith dealer only
Key blanks can be stock by:	Locksmith dealer only
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer only
Who can process a cut key order:	Locksmith dealer only
Processing cut key orders:	Authorization card, card reader, receipt printer
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco Biaxial Liberty Program

Program Details

Bow Size:	**16 Bow**
Coining Available:	**N/A**
Bow Shape:	**Rounded Edges**
Logo:	**Biaxial Logo/Liberty Hand**



Biaxial Liberty Program
16 Bow – Rounded Edges

Type of Authorization Required:

Program Description:

The Liberty Program was originally developed in 1991 to take advantage of the benefits of electronic key management. The Liberty Program utilizes computerized communications between the locksmith's location and the Medeco factory to facility cutting Biaxial Liberty keys. In order to receive additional cut keys, the end-user must present their authorization card to a participating Liberty dealer. After the locksmith has verified the identity of the individual and has deemed them authorized to request additional cut keys, the locksmith will swipe the authorization card through a card reader. The card reader is specific to the individual dealer and is used in conjunction with a receipt printer. The card reader will connect with the host server, located at the Medeco factory, and will verify the contents of the authorization card. If the information on the authorization card is valid, the host server will send the bitting information for the authorization card back to the locksmith in the form of a two-ply receipt. Liberty authorization cards are tracked electronically and an audit trail of the keys for a end-users system is generated each time a key is cut. The Liberty program is exclusive to the New York City Territory.



Liberty Authorization Card



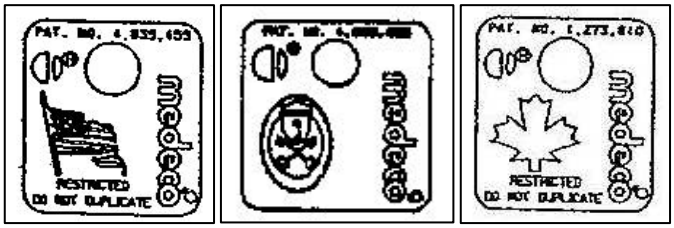
Card Reader and Receipt Printer

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco/Locksmith dealer/Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith/Distributor only
Key blanks shipped to:	Locksmith dealer only
Key blanks can be stock by:	Locksmith dealer only
Key blanks can be ordered from:	Distributor only
Key blanks can be cut by:	Locksmith dealer only
Who can process a cut key order:	Locksmith dealer only
Processing cut key orders:	Authorization card, card reader, receipt printer
Replenishment key blank orders can be ordered through:	Distributor only
Product can be stocked by:	Locksmith dealer/Distributor

Medeco Biaxial Locksmith Service Center (LSC) Program

Program Details

Bow Size: **12 Bow or 17 Bow**
Coining Available:



Biaxial LSC Key
12 Bow or 17 Bow Available

Program Description:

Select Medeco factory authorized locksmith service centers are allowed to reproduce LSC keys. A contract between the LSC and Medeco is required to prevent unauthorized key duplication and proliferation. Key duplication is restricted to the original LSC locksmith who provided the system to the end-user. In order for an end-user to receive duplicate LSC keys, the end-user must go back to the originating LSC's location.

Bow Shape: **12 Bow (Small Square Bow) or 17 Bow (Large Square Bow)**
Logo: **Biaxial Logo with picture (Flag, ALOA symbol or Maple Leaf – CANADA ONLY)**

Type of Authorization Required:

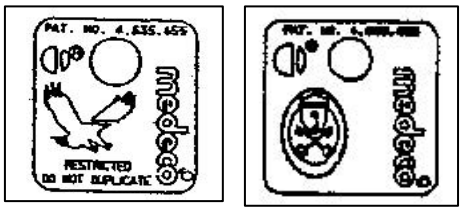
Individual Dealer Discretion and Design (adhering to Medeco Contract Requirements)

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco and Locksmith dealer
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer only
Key blanks shipped to:	Locksmith dealer only
Key blanks can be stock by:	Locksmith dealer only
Key blanks can be ordered from:	Medeco only
Key blanks can be cut by:	Locksmith dealer only
Who can process a cut key order:	Locksmith dealer only
Processing cut key orders:	Signature card at dealer location
Replenishment key blank orders can be ordered through:	Medeco only
Product can be stocked by:	Locksmith dealer only

Medeco Biaxial Dealer Based Keyway (DBK) Program

Program Details

Bow Size: **12 Bow or 17 Bow**
Coining Available:



Biaxial DBK Program Key
12 Bow or 17 Bow Available

Program Description:

Select Medeco factory authorized locksmiths are allowed to reproduce DBK keys. A contract between the DBK and Medeco is required to prevent unauthorized key duplication and proliferation. Key duplication is restricted to the original DBK locksmith who provided the system to the end-user. In order for an end-user to receive duplicate DBK keys, the end-user must go back to the originating DBK's location.

Bow Shape: **12 Bow (Small Square Bow) or 17 Bow (Large Square Bow)**
Logo: **Biaxial Logo with picture (Eagle or ALOA Symbol)**

Type of Authorization Required:

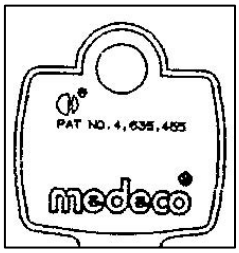
Individual Dealer Discretion and Design (adhering to Medeco Contract Requirements)

Contract required:	Yes
Buy-In:	$5000 plus key machine
Contract between:	Medeco and Locksmith dealer
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	Locksmith dealer only
Key blanks can be stock by:	Locksmith dealer only
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer only
Who can process a cut key order:	Locksmith dealer only
Processing cut key orders:	Signature card at dealer location
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco Biaxial Factory Restricted Program

Program Detail

Bow Size: **16 Bow**
Coining Available: **N/A**
Bow Shape: **Rounded Edges**
Logo: **Biaxial Logo Only**



Biaxial Factory Restricted
16 Bow – Rounded Edges

Program Description:

The Medeco Factory Restricted program is the highest level of key control available from Medeco. Only the Medeco factory can make duplicate keys for the factory restricted program. Installation data, keying specifications and an authorized signature must be specified for the factory files upon the initiating order, and all subsequent key orders must show the same signature as the original request. Medeco key blanks do not leave the Medeco factory.

Type of Authorization Required:

Letter of Authorization from authorized signor. Letter must state the name of the locksmith ordering through, the specific number of cylinder and keys needed and authorized signor's signature. Records are kept at the Medeco factory.

Contract required:	No
Buy-In:	N/A
Contract between:	N/A
Medeco key machine required:	N/A
Key blanks sold to:	N/A
Key blanks shipped to:	N/A
Key blanks can be stock by:	N/A
Key blanks can be ordered from:	N/A
Key blanks can be cut by:	Medeco only
Who can process a cut key order:	Locksmith dealer/Distributor
Processing cut key orders:	Written letter signed by authorized signor
Replenishment key blank orders can be ordered through:	N/A
Product can be stocked by:	N/A

Medeco Biaxial End User Program

Program Details

Bow Size: **12 Bow or 17 Bow**
Coining Available:



Biaxial End User Program
12 Bow or 17 Bow Available

Program Description:

Qualifying end users can participate in Medeco's End User Program. This program is designed for large institutions, such as, hospitals, universities, etc, that have a locksmith on staff at their facility. A contract between the institution and Medeco is required to prevent unauthorized key duplication and proliferation. Key duplication is restricted to the end-user's location.

Bow Shape: **12 Bow (Small Square Bow) or 17 Bow (Large Square Bow)**
Logo: **Biaxial Logo**

Type of Authorization Required:

Individual End User Discretion and Design (adhering to Medeco Contract Requirements)

Contract required:	Yes
Buy-In:	500 cylinders plus key machine
Contract between:	Medeco and End-User
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	End-user
Key blanks can be stock by:	End-user
Key blanks can be ordered from:	Locksmith dealer/Distributor
Key blanks can be cut by:	End-user
Who can process a cut key order:	End-user
Processing cut key orders:	End-user's discretion
Replenishment key blank orders can be ordered through:	Locksmith dealer/Distributor
Product can be stocked by:	End-user/Locksmith dealer/Distributor

Medeco^3 Product Key Control Programs

Medeco^3 DND Distributor Program

Program Details

Bow Size: **34 Bow**
Coining Available: **N/A**
Bow Shape: **Small Rectangle Bow**
Logo: **Medeco^3**



Medeco^3 DND Key
34 Bow – Small Rectangle Bow

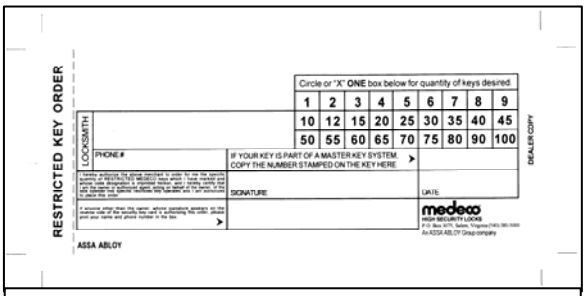
Program Description:

The Medeco^3 DND key control program requires positive identification for key duplication in the form of an authorization card. Authorization cards are supplied with each cylinder when shipped from the factory. In order for an end-user to obtain additional DND cut keys, the end-user must present their authorization card to a participating locksmith. The locksmith will then fill out a restricted key order form (voucher) along with the number of keys desired and the authorized cardholder's signature. The restricted key order form is then sent via mail or through fax (Faxable Voucher Program Distributors Only) to an authorized distributor. If the restricted key order form is properly filled out, the distributor will in turn process the key request and supply the locksmith with the DND cut keys. The locksmith can then present the end-user with the cut keys. Key blanks are only sold to authorized DND distributors. Locksmith cannot cut DND keys. **Authorization card is not tracked electronically. The DND program is a nationwide program.**

Type of Authorization Required:



DND Authorization Card



Restricted Key Order Form (Voucher)

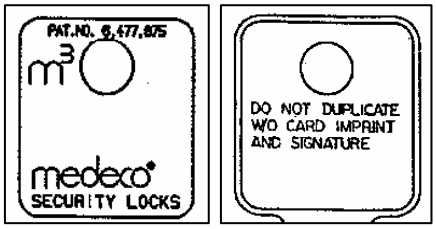
Comparable Medeco Biaxial Program: **Medeco Biaxial GLD Program**

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco and Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Distributor only
Key blanks shipped to:	Distributor only
Key blanks can be stock by:	Distributor only
Key blanks can be ordered from:	Medeco only
Key blanks can be cut by:	Medeco or authorized distributor
Who can process a cut key order:	Locksmith dealer/Ditributor/Medeco
Processing cut key orders:	Authorization card and voucher
Replenishment key blank orders can be ordered through:	Medeco only
Product can be stocked by:	Locksmith dealer/Distrubtor

Medeco^3 NYC Distributor Program

Program Details

Bow Size:	**34 Bow**
Coining Available:	**N/A**
Bow Shape:	**Small Rectangle Shape**
Logo:	**Medeco^3 Logo**

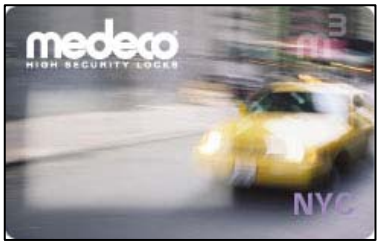


Medeco^3 NYC Key
34 Bow – Small Rectangle Shape

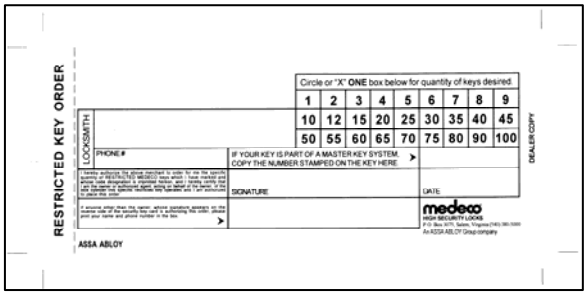
Program Description:

The Medeco^3 NYC key control program requires positive identification for key duplication in the form of an authorization card. Authorization cards are supplied with each cylinder when shipped from the factory. In order for an end-user to obtain additional NYC cut keys, the end-user must present their authorization card to a participating locksmith. The locksmith will then fill out a restricted key order form (voucher) along with the number of keys desired and the authorized cardholder's signature. The restricted key order form is then sent via mail or through fax (Faxable Voucher Program Distributors Only) to an authorized distributor. If the restricted key order form is properly filled out, the distributor will in turn process the key request and supply the locksmith with the NYC cut keys. The locksmith can then present the end-user with the cut keys. Key blanks are only sold to authorized NYC distributors. Locksmith cannot cut NYC keys **Authorization card is not tracked electronically. The NUK program is exclusive to the New York Territory.**
.

Type of Authorization Required:



NYC Authorization Card



Restricted Key Order Form (Voucher)

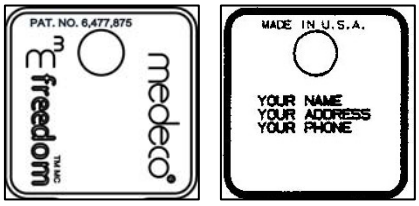
Comparable Medeco Biaxial Program: **Medeco Biaxial NUK Program**

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco and Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Distributor only
Key blanks shipped to:	Distributor only
Key blanks can be stock by:	Distributor only
Key blanks can be ordered from:	Distributor only
Key blanks can be cut by:	Distributor only
Who can process a cut key order:	Locksmith dealer/Distributor
Processing cut key orders:	Authorization card and voucher
Replenishment key blank orders can be ordered through:	Medeco only
Product can be stocked by:	Locksmith dealer/Distributor

Medeco^3 Freedom Program

Program Details

Bow Size:	**33 Bow**
Coining Available:	**N/A**
Bow Shape:	**Large Square Bow**
Logo:	**Medeco^3 Logo/Freedom**



Medeco3 Freedom Key
33 Bow – Large Square Bow

Type of Authorization:

Program Description:

The Freedom Program was developed after the successful Patriot Biaxial Program. The Freedom Program utilizes computerized communications between the locksmith's location and the Medeco factory to facility cutting Medeco^3 Freedom keys. In order to receive additional cut keys, the end-user must present their authorization card to a participating Freedom dealer. After the locksmith has verified the identity of the individual and has deemed them authorized to request additional cut keys, the locksmith will swipe the authorization card through a card reader. The card reader is specific to the individual dealer and is used in conjunction with a receipt printer. The card reader will connect with the host server, located at the Medeco factory, and will verify the contents of the authorization card. If the information on the authorization card is valid, the host server will send the bitting information for the authorization card back to the locksmith in the form of a two-ply receipt. Freedom authorization cards are tracked electronically and an audit trail of the keys for a end-users system is generated each time a key is cut. **The Freedom program is a nationwide program.**



Freedom Authorization Card



Card Reader and Receipt Printer

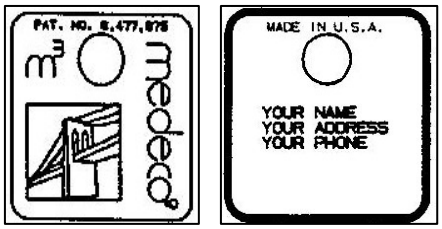
Comparable Medeco Biaxial Program: Medeco Biaxial Patriot Program

Contract required:	Yes
Buy-In:	$2000
Contract between:	Medeco and Locksmith dealer
Medeco key machine required:	No
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	Locksmith dealer
Key blanks can be stock by:	Locksmith dealer
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer
Who can process a cut key order:	Locksmith dealer
Processing cut key orders:	Authorization card, card reader, receipt printer
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco^3 Gotham Program

Program Details:

Bow Size:	**33 Bow**
Coining Available:	**N/A**
Bow Shape:	**Large Square Bow**
Logo:	**Medeco^3 Logo/Brooklyn Bridge**



Medeco3 Gotham Key
33 Bow – Large Square Bow

Program Description:

The Gotham Program was developed from the successful Liberty Biaxial Program. The Gotham Program utilizes computerized communications between the locksmith's location and the Medeco factory to facility cutting Medeco^3 Gotham keys. In order to receive additional cut keys, the end-user must present their authorization card to a participating Gotham dealer. After the locksmith has verified the identity of the individual and has deemed them authorized to request additional cut keys, the locksmith will swipe the authorization card through a card reader. The card reader is specific to the individual dealer and is used in conjunction with a receipt printer. The card reader will connect with the host server, located at the Medeco factory, and will verify the contents of the authorization card. If the information on the authorization card is valid, the host server will send the bitting information for the authorization card back to the locksmith in the form of a two-ply receipt. Gotham authorization cards are tracked electronically and an audit trail of the keys for a end-users system is generated each time a key is cut. **The Gotham program is exclusive to the New York City Territory**.

Type of Authorization Required:



Gotham Authorization Card



Card Reader and Receipt Printer

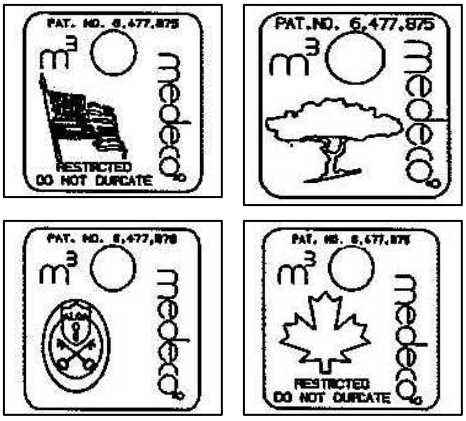
Comparable Medeco Biaxial Program: Medeco Biaxial Liberty Program

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco/Locksmith dealer/Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	Locksmith dealer
Key blanks can be stock by:	Locksmith dealer
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer
Who can process a cut key order:	Locksmith dealer
Processing cut key orders:	Authorization card, card reader, receipt printer
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco^3 Locksmith Service Center (LS3) Program

Program Details

Bow Size: **33 Bow or 34 Bow**
Coining Available:



Medeco3 LS3 Key
33 Bow or 34 Bow Available

Program Description:

Select Medeco factory authorized locksmith service centers are allowed to reproduce LS3 keys. A contract between the LS3 and Medeco is required to prevent unauthorized key duplication and proliferation. Key duplication is restricted to the original LS3 locksmith who provided the system to the end-user. In order for an end-user to receive duplicate LS3 keys, the end-user must go back to the originating LS3's location.

Bow Shape: **33 Bow (Large Square Bow) or 34 Bow (Small Square Bow)**
Logo: **Medeco^3 Logo**

Type of Authorization Required:

Individual Dealer Discretion and Design (adhering to Medeco Contract Requirements)

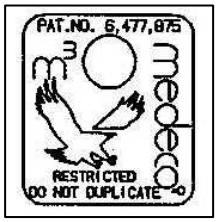
Comparable Medeco Biaxial Program: **Medeco Biaxial LSC Program**

Contract required:	Yes
Buy-In:	Call Factory
Contract between:	Medeco and Locksmith dealer
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	Locksmith dealer
Key blanks can be stock by:	Locksmith dealer
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer
Who can process a cut key order:	Locksmith dealer
Processing cut key orders:	Signature card at dealer location
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco^3 Dealer Based Keyway (DB3) Program

Program Details

Bow Size: **33 Bow or 34 Bow**
Coining Available:



Medeco^3 DB3 Key
33 Bow or 34 Bow Available

Program Description:

Select Medeco factory authorized locksmiths are allowed to reproduce DB3 keys. A contract between the DB3 and Medeco is required to prevent unauthorized key duplication and proliferation. Key duplication is restricted to the original DB3 locksmith who provided the system to the end-user. In order for an end-user to receive duplicate DB3 keys, the end-user must go back to the originating DB3's location.

Bow Shape: **33 Bow (Large Square Bow) or 34 Bow (Small Square Bow)**
Logo: **Medeco^3 Logo with picture (Eagle Only)**

Type of Authorization Required:

Individual Dealer Discretion and Design (adhering to Medeco Contract Requirements)

Comparable Medeco Biaxial Program: **Medeco Biaxial DBK Program**

Contract required:	Yes
Buy-In:	$5000 plus key machine
Contract between:	Medeco and Locksmith dealer
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	Locksmith dealer
Key blanks can be stock by:	Locksmith dealer
Key blanks can be ordered from:	Medeco or authorized distributor
Key blanks can be cut by:	Locksmith dealer
Who can process a cut key order:	Locksmith dealer
Processing cut key orders:	Signature card at dealer location
Replenishment key blank orders can be ordered through:	Medeco or authorized distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco^3 Distributor/Dealer Based Keyway (DB3-D) Program

Program Details

Bow Size: **33 Bow or 34 Bow**
Coining Available:



Medeco^3 DB3-D Key
33 Bow or 34 Bow Available

Program Description:

Select Medeco factory authorized distributors are allowed to sell DB3-D product and keys. A contract between the DB3-D distributor, the DB3-D locksmith and Medeco is required to prevent unauthorized key duplication and proliferation. Key duplication is restricted to the original DB3-D locksmith who provided the system to the end-user. The DB3-D dealer can only order product from the originating DB3-D distributor. In order for an end-user to receive duplicate DB3 keys, the end-user must go back to the originating DB3's location. In order for a DB3-D dealer to receive additional product or key blanks, they must go back to the originating DB3-D distributor. The DB3-D program works similar to the DB3 program, however, it originates at the distributor level of distribution.

Bow Shape: **33 Bow (Large Square Bow) or 34 Bow (Small Square Bow)**
Logo: **Medeco^3 Logo with picture (Eagle Only)**

Type of Authorization Required:

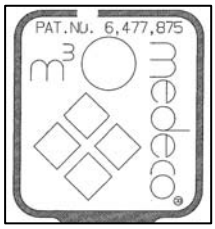
Individual Dealer Discretion and Design (adhering to Medeco Contract Requirements)

Comparable Medeco Biaxial Program: **New Program within Medeco^3 Product Line**

Contract required:	Yes
Buy-In:	$2500 plus key machine
Contract between:	Medeco/Locksmith dealer/Distributor
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer/Originating Distributor
Key blanks shipped to:	Locksmith dealer
Key blanks can be stock by:	Locksmith dealer
Key blanks can be ordered from:	Originating Distributor
Key blanks can be cut by:	Locksmith dealer
Who can process a cut key order:	Locksmith dealer
Processing cut key orders:	Signature card at dealer location
Replenishment key blank orders can be ordered through:	Originating Distributor
Product can be stocked by:	Locksmith dealer/Distributor

Medeco^3 Factory Restricted Program

Bow Size: **33 Bow**
Coining Available: **N/A**
Bow Shape: **Large Square Bow**
Logo: **Medeco^3 Logo and Diamonds**



Medeco^3 Factory Restricted Key
34 Bow – Large Square Bow

Program Description:

The Medeco Factory Restricted program is the highest level of key control available from Medeco. Only the Medeco factory can make duplicate keys for the factory restricted program. Installation data, keying specifications and an authorized signature must be specified for the factory files upon the initiating order, and all subsequent key orders must show the same signature as the original request. Medeco key blanks do not leave the Medeco factory.

Type of Authorization:

Letter of Authorization from authorized signor. Letter must state the name of the locksmith ordering through, the specific number of cylinder and keys needed and authorized signor's signature. Records are kept at the Medeco factory.

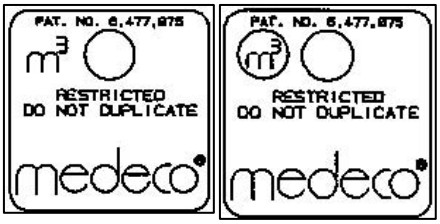
Comparable Medeco Biaxial Program: **Biaxial Factory Restricted**

Contract required:	No
Buy-In:	N/A
Contract between:	N/A
Medeco key machine required:	N/A
Key blanks sold to:	N/A
Key blanks shipped to:	N/A
Key blanks can be stock by:	N/A
Key blanks can be ordered from:	N/A
Key blanks can be cut by:	Medeco only
Who can process a cut key order:	Locksmith dealer/Distributor
Processing cut key orders:	Written letter signed by authorized signor
Replenishment key blank orders can be ordered through:	N/A
Product can be stocked by:	N/A

Medeco^3 End User Program

Program Details

Bow Size: **33 Bow or 34 Bow**
Coining Available:



Medeco^3 End User Program Key
33 Bow or 34 Bow Available

Program Description:

Qualifying end users can participate in Medeco's End User Program. This program is designed for large institutions, such as, hospitals, universities, etc, that have a locksmith on staff at their facility. A contract between the institution and Medeco is required to prevent unauthorized key duplication and proliferation. Key duplication is restricted to the end-user's location. Medeco^3 end user programs are available in Medeco Original cylinder technology and in Medeco Biaxial cylinder technology.

Bow Shape: **33 Bow (Large Square Bow) or 34 (Small Square Bow)**
Logo: **Medeco^3 Original Product (M^3 Logo with circle) or Medeco^3 Biaxial Product (M^3 Logo w/o circle)**

Type of Authorization:

Individual End User Discretion and Design (adhering to Medeco Contract Requirements)

Comparable Medeco Biaxial Program: **Biaxial End User Program**

Contract required:	Yes
Buy-In:	500 cylinders plus key machine
Contract between:	Medeco and End-User
Medeco key machine required:	Yes
Key blanks sold to:	Locksmith dealer/Distributor
Key blanks shipped to:	End-user
Key blanks can be stock by:	End-user
Key blanks can be ordered from:	Locksmith dealer/Distributor
Key blanks can be cut by:	End-user
Who can process a cut key order:	End-user
Processing cut key orders:	End-user's discretion
Replenishment key blank orders can be ordered through:	Locksmith dealer/Distributor
Product can be stocked by:	End-user/Locksmith dealer/Distributor

Servicing Tools – Medeco^3 Biaxial Cylinders

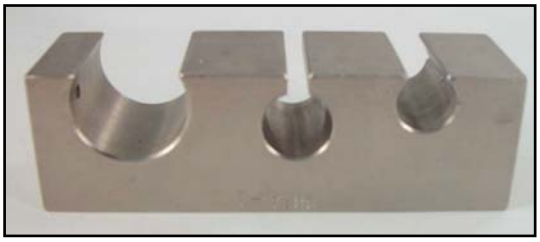
Medeco^3 Biaxial Pin Kit – K-5001, .025" Pin Increment



- 30 each of Bottom, Master, and Top Pins
- 5 Pin Stainless Steel pin chamber covers (20 Series)
- 6 Pin Stainless Steel pin chamber covers (20 Series)
- 5 Pin Brass pin chamber covers (31, 32, 60 Series)
- 6 Pin Brass pin chamber covers (31, 32 Series)
- 5 Pin Sidebars
- 6 Pin Sidebars
- CP-030001 Tumbler Springs

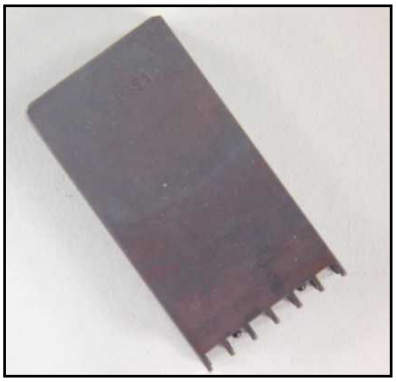
Cylinder Holding Fixture – CP-282451

Used to hold Medeco^3 Biaxial rim/mortise cylinders, KIK/KIL cylinders, and plugs while pinning and staking.



Staking Tool (KIK/KIL Cylinders) – CP-282391

Used to stake the solid stainless steel pin chamber cover on the bible chamber of the Medeco^3 Biaxial KIK/KIL cylinders. Holds pin stacks and tumbler springs in the pin chambers.



Staking Tool (Large Format Interchangeable Core) – CP-282430

Used to flatten the solid brass pin chamber cover on the Medeco^3 Biaxial Large Format Interchangeable Cores (31 & 32 Series).



KeyLube 2.0 – PX-KYLUB2-03



- Used to lubricate Medeco cylinders
- Unique to Medeco
- Petroleum bases lubricant
- Other lubricants authorized by Medeco to use on Medeo^3 cylinders:
  Super Lube®
  Poxylube®

Lubricants other than the ones listed above will void the warranty on Medeco cylinders if used.

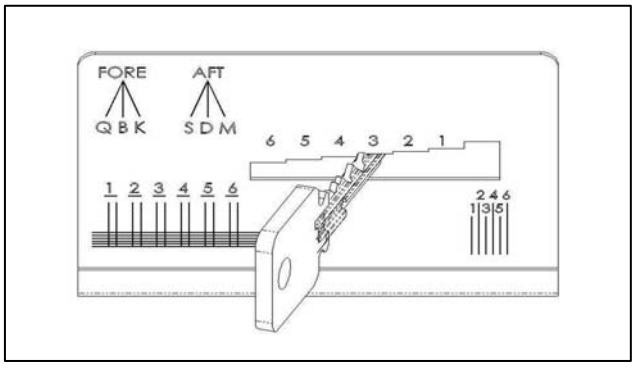
Medeco Screwdriver or 1/8" Allen Wrench

Used to tighten the allen set screws on Medeco rim/mortise cylinder pin chambers



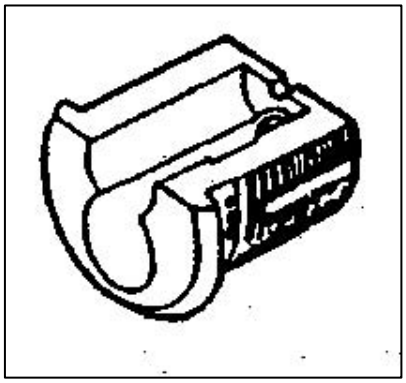
Medeco^3 Biaxial Key Decoder – 94-0032

Used to decode Medeco^3 Biaxial key depths, angles, and side bittings



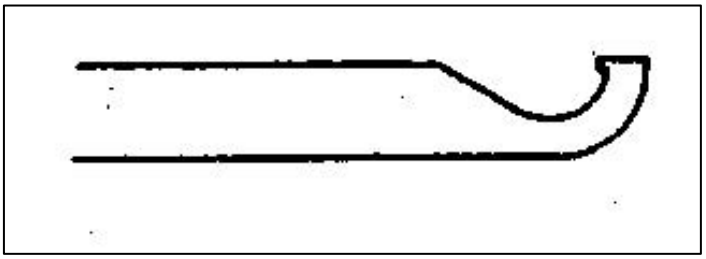
32 Series Interchangeable Core Holding Fixture – T-7185A

Used to hold the 32 Series Interchangeable core while pinning or servicing. The 32 Series cores is placed in this cut-a-way mortise housing and then held by the CP-282451 Cylinder Holding Fixture.



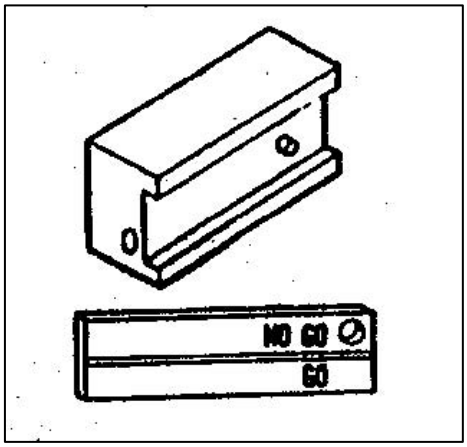
Spanner Wrench – 90-0001

Used to tighten and loosen the tailpiece retainer cap for Medeco and KeyMark Rim cylinders. Allows the retainer cap to be removed to change or rotate tailpiece.

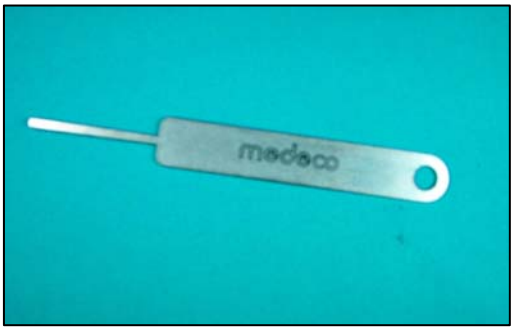


Go-No-Go Key Machine Adjust Gauge
Biaxial Key Machine 95-101451
Original Key Machine 95-100081

Used to check the accuracy of Original and Biaxial key cut depths and cut spacing when cut on a Medeco Power Key Machine. Required to properly adjust key machine.



Capping Tool for KIK new-style pin chamber covers **94-0207**



Medeco Product Series Designation

Each Medeco product is categorized with a product series number. This is typically the first two digits of the product part number. Use the chart below to help you identify the type of Medeco product you are working with.

Medeco Product Series Designations	
Part Number Prefix	**Product Type/Description**
10-	Rim/Mortise Cylinders, Steelguard Dropbolt, Bodyguard Protection Plate
11-	Maxum Deadbolt, auxiliary components for Maxum
12-	Plugs for Door Hardware Cylinders
13-	Shells for Door Hardware Cylinders
15-	Tubular Deadlatch
18-	Embassy Levers – Grade 2
19-	Embassy Levers – Grade 1
20-	Key-In-Knob/Key-In-Level Retrofit Cylinders
22-	Telephone Locks
23-	Export/International Cylinders
24-	Embassy Knobs – Grade 1
25-	Embassy Knobs – Grade 2
31-	Medeco 31 Series Retrofit Large Format Interchangeable Core for Yale LFIC
32-	Medeco Large Format Interchangeable Cores/ IC Housings
49-	Special Application Cylinders
50-	Brass Body Padlocks
52-	Metro Padlocks
54-	System Series Padlocks
60-	Cam Locks
61-	Rotary Switch Locks
62-	Cabinet Locks
63-	Extension Locks
64-	Pop-Out Cylinders and removable plug cylinders
65-	Switch Locks
66-	Plugs for Cam Locks/Switch Locks
67-	Shells for Cam Locks/Switch Locks
68-	24 K Switch Locks - **OBSOLETE!!!**
90	Sales Aids/Tools, Mounts, Cut-A-Way cylinders
94-	Locksmith Accessories, Kits
95-	Key Machines and Key Machine Accessories
96-	Gate Lock
RL-	Residential Locksets
CP-	Component parts, sidebars, retainers, shackles, actuators, switches, etc…
CT-	Cams, tailpieces, and threaded extensions
KY-	Key blanks, cut keys
T-	Servicing Tools
TP-	Bottom pins, master wafers, drivers (top pins)
LT-	Literature, Promotional Items, Marketing Materials
K-	Pin kits