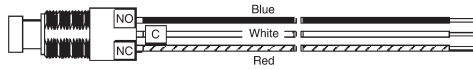
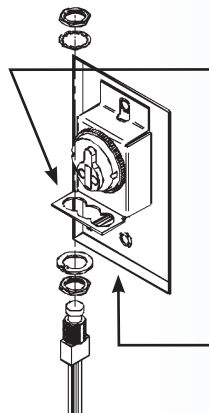


Switch (Momentary/Alternate)



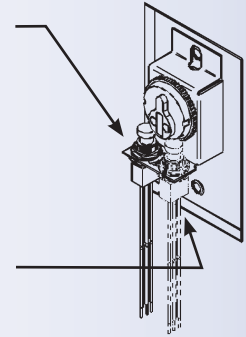
SPTD: 3-Wire (As Shown)
DPDT: 6-Wire (As Shown x 2 Pole Sets)



Switch Assembly

Switch Position
for 90° Clockwise
(3 O'Clock Activation)

Optional/Additional
Switch Position for 90°
Counter-Clockwise
(9 O'Clock Activation)
Or: 180° Individual
CW-CCW
(9 & 3 O'Clock Activation)



Optional Switches for Mortise Switch Plates

Model#	Description	Price
ASMKS	SPDT Momentary	
ASMKSA	SPDT Alternate (ON/OFF)	
ASMKS2	DPDT Momentary	
ASMKS2A	DPDT Alternate (ON/OFF)	

ASSA manufactures high security padlocks in three classes, all of which can be integrated into any new or existing ASSA master key system. Our heavy duty padlocks are made from the highest quality materials and have withstood the most rigorous testing procedures. ASSA padlocks are used in a wide variety of applications including storage rooms, perimeter fences, and armories.



Benefits:

- Sturdy design ensures maximum durability
- Class 2 available in key retaining and non-key retaining, extended shackle
- Shackle made of rust resistant case hardened steel
- Hockey Puck style shackleless design provides maximum protection against hacksaw and bolt cutter attacks
- Drain holes to prevent freezing
- No external screws or rivets
- A protective dust cover made from durable molded plastic is available for use with these padlocks

Technical Information:

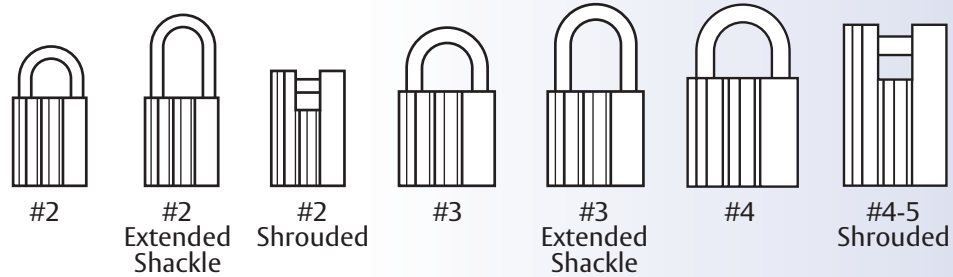
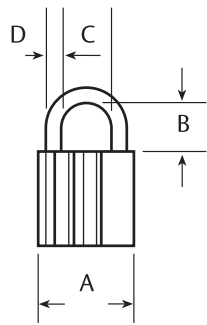
- Class 2 body extruded brass, rust resistant case hardened steel shackle, tensile strength 1.5 tons. (Class 2 not recommended for exterior use)
- Class 2 convertible from key retaining to non-key retaining
- Class 3 body case hardened steel, rust resistant case hardened steel shackle, tensile strength 4.5 tons
- Hockey Puck style body can withstand up to 10,000 lbs of force from bolt cutters
- Stainless steel top pins
- Bottom pins and master pins are nickel silver

Warranty:

- ASSA warrants its cylinders against defective workmanship or wear resulting from defects for one year

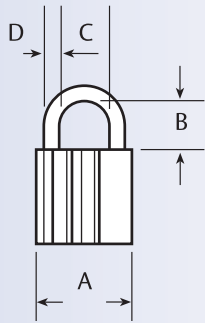
Certification:

- All ASSA High Security Padlocks are U.L. 437 listed



Model#	Notes	Description	A	B	C	D	Comp	Sub	SNS
Maximum +									
98190B		No.2 Non-Key-Retaining	1.900	1.100	0.940	0.315			
98190LB		No.2 Non-Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
98190SB		No.2 Non-Key-Ret. w/Shrouded Shackle	1.900	0.535	0.475	0.315			
98191B		No.2 Key-Retaining	1.900	1.100	0.940	0.315			
98191LB		No.2 Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
98391B		No.3 Key-Retaining	2.450	1.235	1.295	0.395			
98391LB		No.3 Key-Retaining Ext. Shackle	2.450	1.875	1.295	0.395			
98391SB		No.3 Key Ret. w/Shrouded Shackle	2.450	0.710	0.590	0.395			
98491B		No.4 Key-Retaining	3.150	0.985	0.830	0.550			
98591SB		No.5 Key Ret. w/Shrouded Shackle	3.150	0.985	0.830	0.550			
Maximum + Restricted Padlocks									
R28190B		No.2 Non-Key-Retaining	1.900	1.100	0.940	0.315			—
R28190LB		No.2 Non-Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			—
R28190SB		No.2 Non-Key-Ret. w/Shrouded Shackle	1.900	0.535	0.475	0.315			—
R28191B		No.2 Key-Retaining	1.900	1.100	0.940	0.315			—
R28191LB		No.2 Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			—
R28391B		No.3 Key-Retaining	2.450	1.235	1.295	0.395			—
Twin Maximum									
88190B	CLIQ	No.2 Non-Key-Retaining	1.900	1.100	0.940	0.315			
88190LB	CLIQ	No.2 Non-Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
88190SB	CLIQ	No.2 Non-Key-Ret. w/Shrouded Shackle	1.900	0.535	0.475	0.315			
88191B	CLIQ	No.2 Key-Retaining	1.900	1.100	0.940	0.315			
88191LB	CLIQ	No.2 Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
88391B	CLIQ	No.3 Key-Retaining	2.450	1.235	1.295	0.395			
88391LB	CLIQ	No.3 Key-Retaining Ext. Shackle	2.450	1.875	1.295	0.395			
88391SB	CLIQ	No.3 Key Ret. w/Shrouded Shackle	2.450	0.710	0.590	0.395			
88491B	CLIQ	No.4 Key-Retaining	3.150	0.985	0.830	0.550			
88591SB	CLIQ	No.5 Key Ret. w/Shrouded Shackle	3.150	0.985	0.830	0.550			
Twin Exclusive									
E65190B		No.2 Non-Key-Retaining	1.900	1.100	0.940	0.315			
E65190LB		No.2 Non-Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
E65190SB		No.2 Non-Key-Ret. w/Shrouded Shackle	1.900	0.535	0.475	0.315			
E65191B		No.2 Key-Retaining	1.900	1.100	0.940	0.315			
E65191LB		No.2 Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
E65391B		No.3 Key-Retaining	2.450	1.235	1.295	0.395			
E65391LB		No.3 Key-Retaining Ext. Shackle	2.450	1.875	1.295	0.395			
E65391SB		No.3 Key Ret. w/Shrouded Shackle	2.450	0.710	0.590	0.395			
E65491B		No.4 Key-Retaining	3.150	0.985	0.830	0.550			
E65591SB		No.5 Key Ret. w/Shrouded Shackle	3.150	0.985	0.830	0.550			

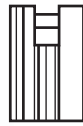
CLIQ – Twin Maximum available with CLIQ™ Technology. Example: 88191B x CLIQ x 626 x Sidebar x Comp



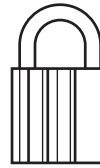
#2



#2
Extended
Shackle



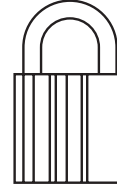
#2
Shrouded



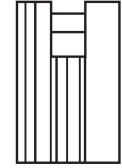
#3



#3
Extended
Shackle



#4



#4-5
Shrouded

Model#	Notes	Description	A	B	C	D	Comp	Sub	SNS
Twin 6000 Classic									
65190B		No.2 Non-Key-Retaining	1.900	1.100	0.940	0.315			
65190LB		No.2 Non-Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
65190SB		No.2 Non-Key-Ret. w/Shrouded Shackle	1.900	0.535	0.475	0.315			
65191B		No.2 Key-Retaining	1.900	1.100	0.940	0.315			
65191LB		No.2 Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
65391B		No.3 Key-Retaining	2.450	1.235	1.295	0.395			
65391LB		No.3 Key-Retaining Ext. Shackle	2.450	1.875	1.295	0.395			
65391SB		No.3 Key Ret. w/Shrouded Shackle	2.450	0.710	0.590	0.395			
65491B		No.4 Key-Retaining	3.150	0.985	0.830	0.550			
65591SB		No.5 Key Ret. w/Shrouded Shackle	3.150	0.985	0.830	0.550			
Twin V-10									
V65190B		No.2 Non-Key-Retaining	1.900	1.100	0.940	0.315			
V65190LB		No.2 Non-Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
V65190SB		No.2 Non-Key-Ret. w/Shrouded Shackle	1.900	0.535	0.475	0.315			
V65191B		No.2 Key-Retaining	1.900	1.100	0.940	0.315			
V65191LB		No.2 Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
V65391B		No.3 Key-Retaining	2.450	1.235	1.295	0.395			
V65391LB		No.3 Key-Retaining Ext. Shackle	2.450	1.875	1.295	0.395			
V65391SB		No.3 Key Ret. w/Shrouded Shackle	2.450	0.710	0.590	0.395			
V65491B		No.4 Key-Retaining	3.150	0.985	0.830	0.550			
V65591SB		No.5 Key Ret. w/Shrouded Shackle	3.150	0.985	0.830	0.550			
Twin Pro									
61190B		No.2 Non-Key-Retaining	1.900	1.100	0.940	0.315			
61190LB		No.2 Non-Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
61190SB		No.2 Non-Key-Ret. w/Shrouded Shackle	1.900	0.535	0.475	0.315			
61191B		No.2 Key-Retaining	1.900	1.100	0.940	0.315			
61191LB		No.2 Key-Retaining Ext. Shackle	1.900	2.035	0.940	0.315			
61391B		No.3 Key-Retaining	2.450	1.235	1.295	0.395			
61391LB		No.3 Key-Retaining Ext. Shackle	2.450	1.875	1.295	0.395			
61391SB		No.3 Key Ret. w/Shrouded Shackle	2.450	0.710	0.590	0.395			
61491B		No.4 Key-Retaining	3.150	0.985	0.830	0.550			
61591SB		No.5 Key Ret. w/Shrouded Shackle	3.150	0.985	0.830	0.550			

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Tools &
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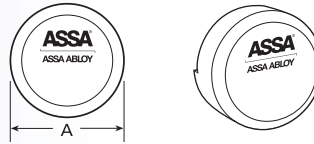
Care &
Maint.

Technical
Specs.

Padlock Cylinders Only

Model#	Notes	Description	Comp	Sub	SNS
Maximum +					
98911		Padlock Cylinder No. 2, 3, 4-5			
Twin Maximum					
88911		Padlock Cylinder No. 2, 3, 4-5			
Twin Exclusive					
E65911		Padlock Cylinder No. 2, 3, 4-5			
Twin 6000 Classic					
65911		Padlock Cylinder No. 2, 3, 4-5			
Twin V-10					
V65911		Padlock Cylinder No. 2, 3, 4-5			
Twin Pro					
61911		Padlock Cylinder No. 2, 3, 4-5			

 – Twin Maximum available with CLIQ™ Technology.
Example: 88191B x CLIQ x 626 x Sidebar x Comp



"Hockey Puck" Shackle Less Padlock

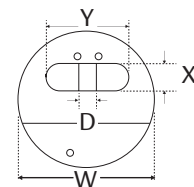
Model#	Notes	Description	A	Comp	Sub	SNS
Maximum +						
9840		Hockey Puck Style Padlock	2.875			
Twin Maximum						
8840		Hockey Puck Style Padlock	2.875			
Twin Exclusive						
E6540		Hockey Puck Style Padlock	2.875			
Twin V-10						
V6540		Hockey Puck Style Padlock	2.875			
Twin Pro						
6140		Hockey Puck Style Padlock	2.875			

867048 — Hockey Puck Plate Screw \$0.32.

867049 — Hockey Puck Stop Plate \$1.32.

"Hockey Puck" Cylinders Only

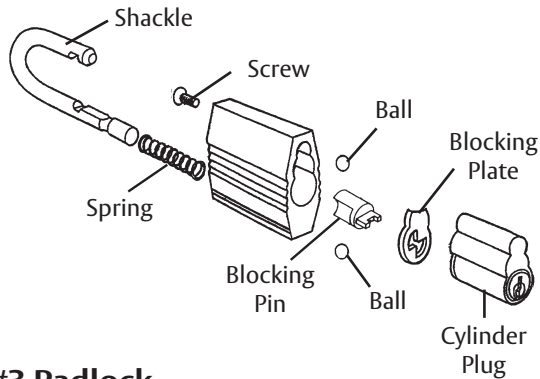
Model#	Notes	Description	Comp	Sub	SNS
Maximum +					
98411		Hockey Puck Cylinder			
Twin Maximum					
88411		Hockey Puck Cylinder			
Twin Exclusive					
E65411		Hockey Puck Cylinder			
Twin V-10					
V65411		Hockey Puck Cylinder			
Twin Pro					
61411		Hockey Puck Cylinder			



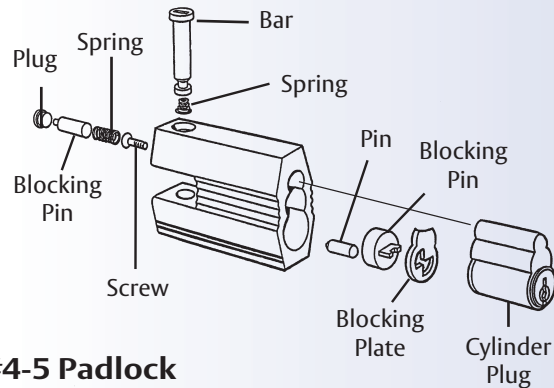
Dial Puck Lock – Shackle Less Resettable Combination

Model#	Description	W	D	X	Y	MSRP
AA-SR400	Resettable Dial Puck Lock 10,000 Combinations	2.875	.375	0.5	1.71875	
AA-SR400-D	Resettable Dial Puck Lock 10,000 Combinations Visual Package	2.875	.375	0.5	1.71875	

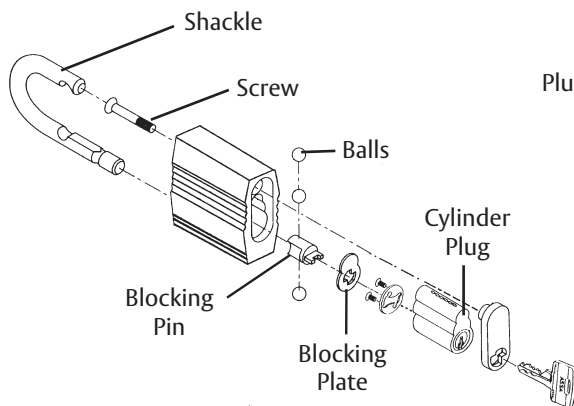
#2 Padlock



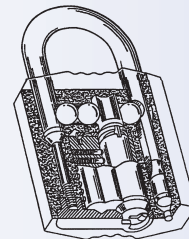
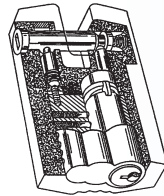
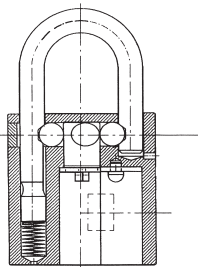
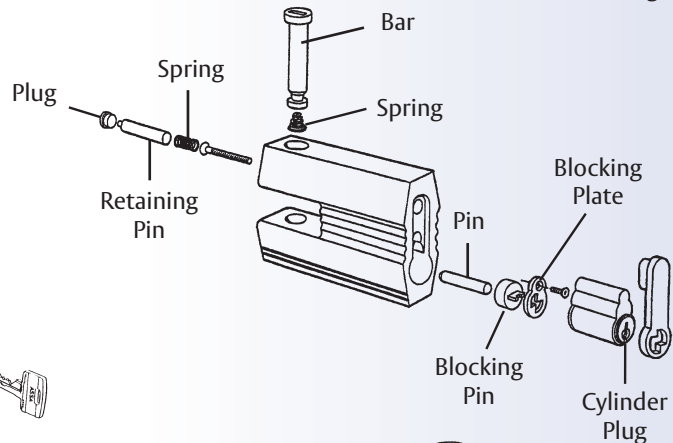
#2 Shrouded Padlock



#3 Padlock



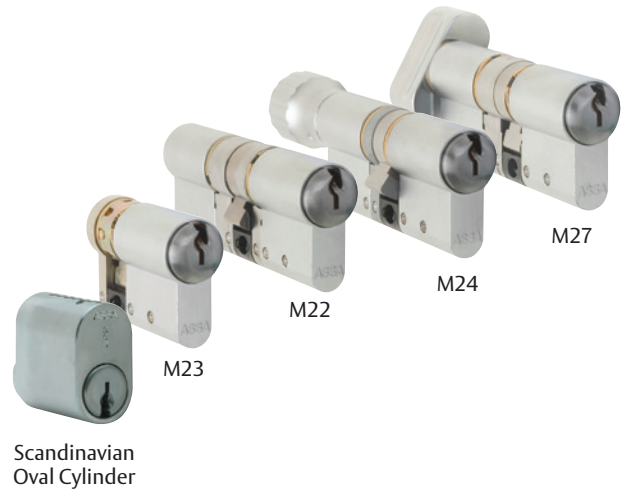
#4-5 Padlock



Padlock Component Parts

Model#	Description	Price
806898	No.2 Regular Shackle	
807217	No.2 Extended Shackle	
P250517	No.2 Shackle Spring	
806910	No.3 Padlock Shackle	
809387	No.2 Key-Retaining Blocking pin	
809388	No.2 Non-Key-Retaining Conversion Kit (Includes Blocking Pin/Spring/Tailpiece)	
P793810	No.2 Tailpiece Cam Screws	
867046	No.2 Tailpiece Washer	
P857300	No.2 Plate & No. 3 Plate	
803607	No.2 Locking Balls	
P793110	No.2 Cylinder Retaining Screw	
806913	No.3 Cylinder Retaining Screw	
803575	No.3 Locking Ball Bearings	
806911	No.3 Blocking Pin	
089280	No.3 Extended Shackle	
353969	Twin V-10 Padlock Cylinder Plug	
367018	Twin 6000 Classic Padlock Cylinder Plug (Specify Profile 50,52,61,62)	
356071	Twin Exclusive / 6000 Classic Padlock Cylinder Plug (Specify Profile 51,851)	
816068	Maximum+ / Twin Maximum Padlock Cylinder Plug (Specify Profile 0A7, 0M7)	

ASSA manufactures a variety of European cylinders including the Scandinavian oval and the Euro Din (M20 Series). Available for different door thicknesses and featuring a cam actuator, ASSA Euro Din cylinders can be used with many types of imported locksets and specialty hardware. All European cylinders can be keyed into any new or existing ASSA key system.



Benefits:

- Retrofits variety of European applications
- Two independent locking mechanisms to ensure security and optimum pick resistance
- Inactive “false” grooves on side pins designed to increase pick resistance

Technical Information:

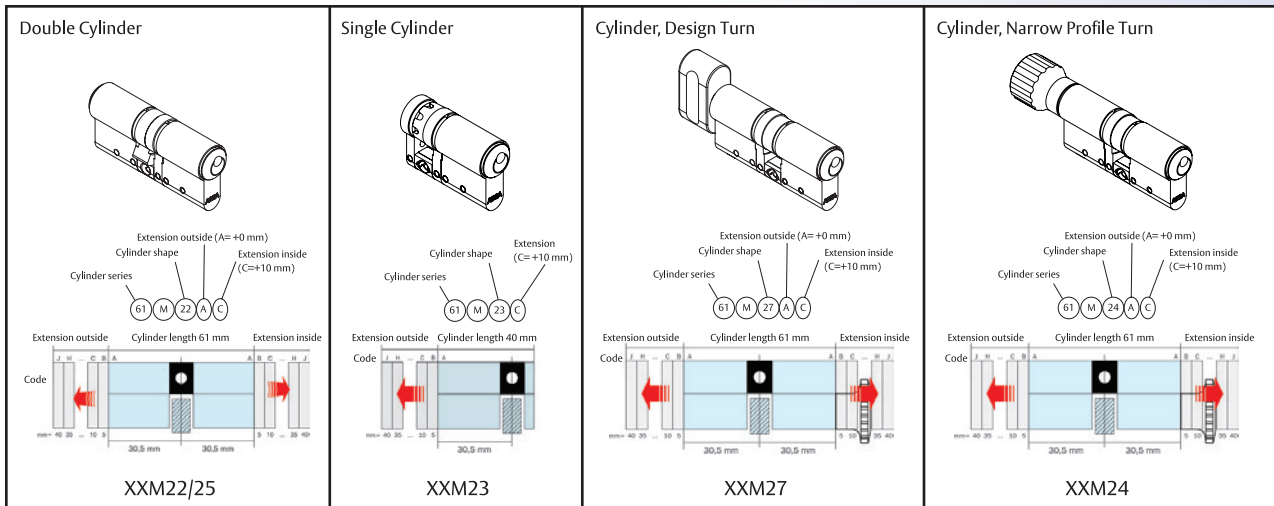
- M20 Series available for different door thicknesses
- Cylinder housing and plug made of high quality brass
- Stainless steel top pins
- Bottom pins and master pins are nickel silver

Warranty:

- ASSA warrants its products against defective workmanship or wear resulting from defects for one year

Finishes:

BHMA Symbol	U.S. Symbol	Description
626	US 26D	Satin Chrome
605	US 3	Bright Brass



Guideline for M20 EURO accessories
Location of lock cases, cylinders and accessories

1. Specification of M20 Cylinder/turn and accessories.
 - a) Measure the door thickness (A).
 - b) Measure the distance between the centre of the lock case and the security side of the door (B).
 - c) Measure the distance between the centre of the lock case and the inside of the door (C).
 - d) Add the thickness of the cylinder accessories to the B and C measurement. The result will be the length of the cylinder/turn.

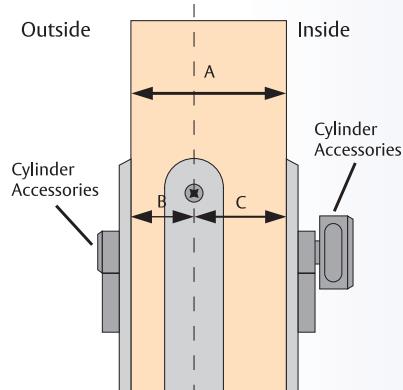


Table Measurement

Code	Length mm
A	+0
B	+5
C	+10
D	+15
E	+20
F	+25
G	+30
H	+35
I	+40
J	+45
K	+50
L	+55

M20 Din Euro Profile Cylinders

Model#	Notes	Description	Comp
Maximum +			
98M27		Large Thumbturn Single Cylinder	
98M24		Small Thumbturn Single Cylinder	
98M22		Double Cylinder	
98M23		Single Cylinder No Thumbturn	
Twin Maximum			
88M27		Large Thumbturn Single Cylinder	
88M24		Small Thumbturn Single Cylinder	
88M22		Double Cylinder	
88M23		Single Cylinder No Thumbturn	
Twin Exclusive			
E65M27		Large Thumbturn Single Cylinder	
E65M24		Small Thumbturn Single Cylinder	
E65M22		Double Cylinder	
E65M23		Single Cylinder No Thumbturn	
Twin V-10			
V65M27		Large Thumbturn Single Cylinder	
V65M24		Small Thumbturn Single Cylinder	
V65M22		Double Cylinder	
V65M23		Single Cylinder No Thumbturn	
Twin 6000 Classic			
65M27		Large Thumbturn Single Cylinder	
65M24		Small Thumbturn Single Cylinder	
65M22		Double Cylinder	
65M23		Single Cylinder No Thumbturn	

 – Twin Maximum available with CLIQ™ Technology. Example: 88M27 x **CLIQ** x Comp

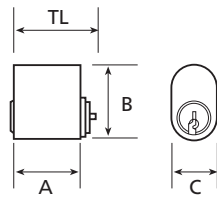
Profile Cylinder Key:

TL – Total Length

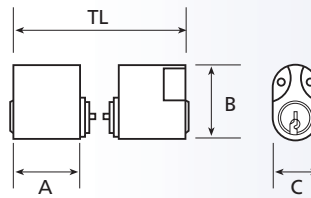
A – Cylinder Length

B – Cylinder Height

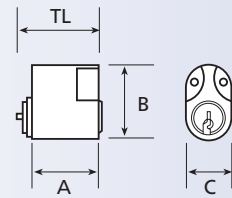
C – Cylinder Width



6501



6502



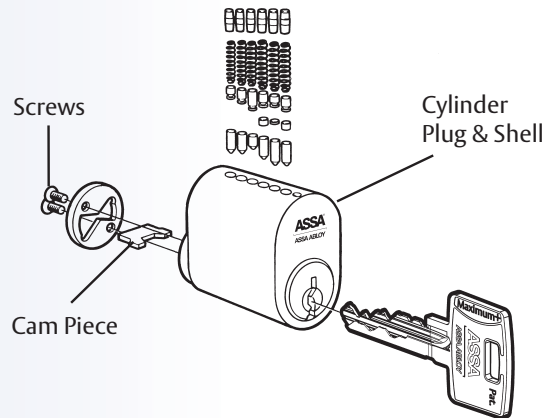
6503

Oval Cylinders

Model#	Notes	Description	TL	A	B	C	Comp	Sub	SNS
Maximum +									
9801		Oval, Outside	1.577	1.236	1.376	0.784			
9801L		Oval, Outside for 505							
9802		Oval, Double	N/A						
9803		Oval, Inside	1.577						
Twin Maximum									
8801		Oval, Outside	1.577	1.236	1.376	0.784			
8801L		Oval, Outside for 505							
8802		Oval, Double	N/A						
8803		Oval, Inside	1.577						
Twin Exclusive									
E6501		Oval, Outside	1.577	1.236	1.376	0.784			
E6501L		Oval, Outside for 505							
E6502		Oval, Double	N/A						
E6503		Oval, Inside	1.577						
Twin 6000 Classic									
6501		Oval, Outside	1.577	1.236	1.376	0.784			
6501L		Oval, Outside for 505							
6502		Oval, Double	N/A						
6503		Oval, Inside	1.577						
Twin V-10									
V6501		Oval, Outside	1.577	1.236	1.376	0.784			
V6501L		Oval, Outside for 505							
V6502		Oval, Double	N/A						
V6503		Oval, Inside	1.577						

– Twin Maximum available with CLIQ™ Technology. Example: 8801 x **CLIQ** x **Comp**

NOTE: Oval cylinders do not include cylinder rings, mounting screws or other trim.



Oval Cylinder Parts

Model#	Description	Price
Maximum+ / Twin Maximum		
867064	Oval Cyl. Housing, Outside	
867110	Oval Cyl. Housing, Inside	
816068 †	Oval Cylinder Plug	
Twin Exclusive / 6000 Classic		
867064	Oval Cyl. Housing, Outside	
867110	Oval Cyl. Housing, Inside	
356071 †	Oval Cylinder Plug (Specify Profile)	
Twin V-10		
867064	Oval Cyl. Housing, Outside	
867110	Oval Cyl. Housing, Inside	
353969	Oval Cylinder Plug	

† – Specify Profile

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Mogul Cyls.

IC Core Cyls.

KIK/KIL Cyls.

Deadbolts

Auxiliary Locks

Padlocks

Profile Cyls.

Pin Kits Tools & Accessories

Care & Maint.

Technical Specs.

ASSA provides all the necessary tools for both the retail and institutional locksmith to service and maintain our locks in the field. We offer several sizes of pinning kits from large, full service kits designed for the shop environment to smaller, convenient kits appropriate for service calls.

Also available are high quality key cutting equipment, all approved ASSA cylinder lubricants.



MPK Master Pin Kit

Item Number	Description	Quantity	Price Per Kit
353838	Left Side Pin V-10	50	
359654	Twin-Max Sidepin Left		
362808	Corbin RC Cover Strip	10	
867046	Tail Piece Washer DBOLT/PDLK	2	
806974	Closing Rods	20	
807164	V-10/T Pro Spring For Side Bar	100	
807165	V-10/T Pro Sidepin Springs		
807401	RC C-Ring	4	
807402	RC Cover Slide	15	
807403	RC Cam Adapter	2	
807404	RC Wave Washer	10	
807405	RC Rubber Stop	6	
809312	IC Core Plug Spacer Washer		
809314	Master Pin 9, IC Core Cylinders	100	
809315	Master Pin 10, IC Core Cylinders		
809316	Master Pin 11, IC Core Cylinders		
809317	Master Pin 12, IC Core Cylinders		
809318	Master Pin 13, IC Core Cylinders		
809319	Master Pin 14, IC Core Cylinders		
809320	Master Pin 15, IC Core Cylinders		
809321	Master Pin 16, IC Core Cylinders		
809322	Master Pin 17, IC Core Cylinders		
809328	Top Pin 2, IC Core Cylinders		
809329	Top Pin 3, IC Core Cylinders		

Continued on next page

MPK Master Pin Kit (Continued)

Item Number	Description	Quantity	Price Per Kit
809330	Top Pin 4, IC Core Cylinders	100	
809331	Top Pin 5, IC Core Cylinders		
809332	Top Pin 6, IC Core Cylinders		
809333	Top Pin 7, IC Core Cylinders		
809334	Top Pin 8, IC Core Cylinders		
809335	Top Pin 9, IC Core Cylinders		
809336	Top Pin 10, IC Core Cylinders		
809340	IC Core Chamber Springs (1-4)		
816080	Twin-Pro Sidepin	50	
867015	Side Pin, ASSA Twin		
867065	600/Twin Pin Chamber Springs	100	
807261	Top Pin A, Twin & 600		
807262	Top Pin B, Twin & 600		
807263	Top Pin C, Twin & 600		
807264	Top Pin D, Twin & 600		
867070	Master Pin 1, Twin & 600		
867071	Master Pin 2, Twin & 600		
867072	Master Pin 3, Twin & 600		
867073	Master Pin 4, Twin & 600		
867074	Master Pin 5, Twin & 600		
867075	Master Pin 6, Twin & 600		
867076	Master Pin 7, Twin & 600		
867077	Master Pin 8, Twin & 600		
867078	Bottom Pin 1, Twin & 600		
867079	Bottom Pin 2, Twin & 600		
867080	Bottom Pin 3, Twin & 600		
867081	Bottom Pin 4, Twin & 600		
867082	Bottom Pin 5, Twin & 600		
867083	Bottom Pin 6, Twin & 600		
867084	Bottom Pin 7, Twin & 600		
867085	Bottom Pin 8, Twin & 600		
867086	Bottom Pin 9, Twin & 600		
867087	Twin Spring For Side Pin		
867088	Twin Spring For Side Bar		
867090	Std Tail Piece Screw Twin/600	25	2
867445	Cam, Adams Rite 600/Twin		
867446	Cam, Clover Leaf 600/Twin		
867447	Cam, Beaver Tail 600/Twin		
867452	Cam, Sargent 600/Twin		
867453	Cam, Schlage	50	4
868141	M/R Cover Strip 600/Twin		
868624	Rollpin Corbin/4—Sargent/2	10	
868958	Schlage Plug Cap		
92C-127	Schlage KIK Plug Cap Spring		
868960	Schlage KIK Plug Cap Pin	2	
872610	Cam, Standard 600/Twin		
900257	Yale Tailpiece Roll Pin		
		10	

PK-1 Pin Kit

Item Number	Description	Quantity	Price Per Kit
353838	Left Side Pin V-10	50	
359654	Twin-Max Sidepin Left		
807164	V-10/T Pro Spring For Side Bar	100	
807165	V-10/T Pro Sidepin Springs		
816080	Twin-Pro Sidepin	50	
867015	Side Pin, ASSA Twin		
867065	600/Twin Pin Chamber Springs	500	
807261	Top Pin A, Twin & 600	100	
807262	Top Pin B, Twin & 600		
807263	Top Pin C, Twin & 600		
807264	Top Pin D, Twin & 600		
867070	Master Pin 1, Twin & 600		
867071	Master Pin 2, Twin & 600		
867072	Master Pin 3, Twin & 600		
867073	Master Pin 4, Twin & 600		
867074	Master Pin 5, Twin & 600		
867075	Master Pin 6, Twin & 600		
867076	Master Pin 7, Twin & 600		
867077	Master Pin 8, Twin & 600		
867078	Bottom Pin 1, Twin & 600		
867079	Bottom Pin 2, Twin & 600		
867080	Bottom Pin 3, Twin & 600		
867081	Bottom Pin 4, Twin & 600		
867082	Bottom Pin 5, Twin & 600		
867083	Bottom Pin 6, Twin & 600		
867084	Bottom Pin 7, Twin & 600		
867085	Bottom Pin 8, Twin & 600		
867086	Bottom Pin 9, Twin & 600		
867087	Twin Spring For Side Pin		
867088	Twin Spring For Side Bar		
867090	Standard Tail Piece Screw Twin/600		
868141	M/R Cover Strip 600/Twin		

PK-IC Interchangeable Core Pin Kit

Item Number	Description	Quantity	Price Per Kit
362808	Corbin RC Cover Strip	10	
807401	RC C-Ring	50	
807402	RC Cover Slide		
807405	RC Rubber Stop		
809312	IC Core Plug Spacer Washer		
809314	Master Pin 9, IC Core Cylinders	100	
809315	Master Pin 10, IC Core Cylinders		
809316	Master Pin 11, IC Core Cylinders		
809317	Master Pin 12, IC Core Cylinders		
809318	Master Pin 13, IC Core Cylinders		
809319	Master Pin 14, IC Core Cylinders		
809320	Master Pin 15, IC Core Cylinders		
809321	Master Pin 16, IC Core Cylinders		
809322	Master Pin 17, IC Core Cylinders		
809328	Top Pin 2, IC Core Cylinders		
809329	Top Pin 3, IC Core Cylinders		
809330	Top Pin 4, IC Core Cylinders		
809331	Top Pin 5, IC Core Cylinders		
809332	Top Pin 6, IC Core Cylinders		
809333	Top Pin 7, IC Core Cylinders		
809334	Top Pin 8, IC Core Cylinders		
809335	Top Pin 9, IC Core Cylinders		
809336	Top Pin 10, IC Core Cylinders		
809340	IC Core Chamber Springs (1-4)		

PK-Cam Pin Kit

Item Number	Description	Quantity	Price Per Kit
807402	RC Cover Slide	50	
809328	Top Pin 2, IC Core Cylinders		
809329	Top Pin 3, IC Core Cylinders		
809330	Top Pin 4, IC Core Cylinders		
809331	Top Pin 5, IC Core Cylinders		
809332	Top Pin 6, IC Core Cylinders		
809333	Top Pin 7, IC Core Cylinders		
809334	Top Pin 8, IC Core Cylinders		
809335	Top Pin 9, IC Core Cylinders		
809340	IC Core Chamber Springs (1-4)		

SFIC Pin Kit

Item Number	Description	Price Per Kit
PK-SFIC	Small Format Interchangeable Core Pin Kit	

MAX Pin Kit

Item Number	Description	Price Per Kit
PK-MAX	Maximum+ Pin Kit	

PKMM Pin Kit

Item Number	Description	Quantity	Price Per Kit
807164	V-10/T Pro Spring For Side Bar	25	
867065	600/Twin Pin Chamber Springs		
807261	Top Pin A, Twin & 600		
807262	Top Pin B, Twin & 600		
807263	Top Pin C, Twin & 600		
807264	Top Pin D, Twin & 600		
867070	Master Pin 1, Twin & 600		
867071	Master Pin 2, Twin & 600		
867072	Master Pin 3, Twin & 600		
867073	Master Pin 4, Twin & 600		
867074	Master Pin 5, Twin & 600		
867075	Master Pin 6, Twin & 600		
867076	Master Pin 7, Twin & 600		
867077	Master Pin 8, Twin & 600		
867078	Bottom Pin 1, Twin & 600		
867079	Bottom Pin 2, Twin & 600		
867080	Bottom Pin 3, Twin & 600		
867081	Bottom Pin 4, Twin & 600		
867082	Bottom Pin 5, Twin & 600		
867083	Bottom Pin 6, Twin & 600		
867084	Bottom Pin 7, Twin & 600		
867085	Bottom Pin 8, Twin & 600		
867086	Bottom Pin 9, Twin & 600		
867088	Twin Spring For Side Bar		
867090	Std Tail Piece Screw Twin/600		

																	
.047" 1.2mm	.071" 1.8mm	.094" 2.4mm	.118" 3.0mm	.142" 3.6mm	.165" 4.2mm	.189" 4.8mm	.213" 5.4mm	.236" 6.0mm	.213" 5.4mm	.236" 6.0mm	.260" 6.6mm	.283" 7.2mm	.307" 7.8mm	.331" 8.4mm	.354" 9.0mm	.378" 9.6mm	.402" 10.2mm
809328	809329	809330	809331	809332	809333	809334	809335	809336	809314	809315	809316	809317	809318	809319	809320	809321	809322

Interchangeable Core Parts

Model#	Notes	Description	Pkg. Qty.	Price
354023		Control Sleeve		
359058	*	Maximum+ and Twin Maximum Inner Plug (Specify 0A7, 0M7)		
353213	*	Twin 6000 Classic and Twin Exclusive IC Inner Plug (Specify 51, 051)		
353968	*	V-10 IC Inner Plug		
807401		IC C-Ring		
807402		IC& Cam Lock Cover Slide		
807403		IC Cam Adapter		
807404		IC Wave Washer		
807405		IC Rubber Stop		
810695	*	IC Core (Figure-8) Housing		
807411	*	IC Mortise/Rim Housing		
809340		IC Core Chamber Spring (1st Four Chambers)	100	
809312		IC Plug Spacer Washer		

*Indicate product finish.

Top Pins for IC Core and Cam Locks Cyls. Only

Model#	Description	Pkg. Qty.	Price
809328	Top Pin #2	100	/pk
809329	Top Pin #3		/pk
809330	Top Pin #4		/pk
809331	Top Pin #5		/pk
809332	Top Pin #6		/pk
809333	Top Pin #7		/pk
809334	Top Pin #8		/pk
809335	Top Pin #9		/pk
809336	Top Pin #10		/pk

Master Pins (Build Up) for IC Core Cyls. Only

Model#	Description	Pkg. Qty.	Price
809314	Master Pin #9	100	
809315	Master Pin #10		
809316	Master Pin #11		
809317	Master Pin #12		
809318	Master Pin #13		
809319	Master Pin #14		
809320	Master Pin #15		
809321	Master Pin #16		
809322	Master Pin #17		

SFIC Pin Parts

Model#	Description	Pkg. Qty.	Price
909001	SFIC Bottom Pin # 1	100	
909002	SFIC Bottom Pin # 2		
909003	SFIC Bottom Pin # 3		
909004	SFIC Bottom Pin # 4		
909005	SFIC Bottom Pin # 5		
909006	SFIC Bottom Pin # 6		
909007	SFIC Bottom Pin # 7		
909008	SFIC Bottom Pin # 8		
911001	SFIC Master Pin #1		
911002	SFIC Master Pin #2		
911003	SFIC Master Pin #3		
911004	SFIC Master Pin #4		
911005	SFIC Master Pin #5		
911006	SFIC Master Pin #6		
911007	SFIC Master Pin #7		
911008	SFIC Master Pin #8		
911009	SFIC Master Pin #9		
911010	SFIC Master Pin #10		
911011	SFIC Master Pin #11		
911012	SFIC Master Pin #12		
809340	Chamber Springs		
910013	Caps		

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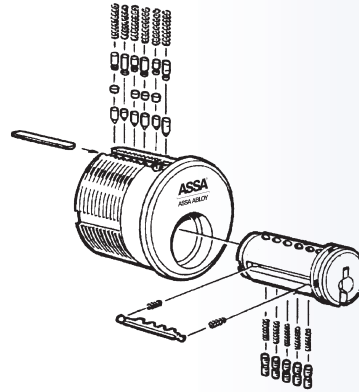
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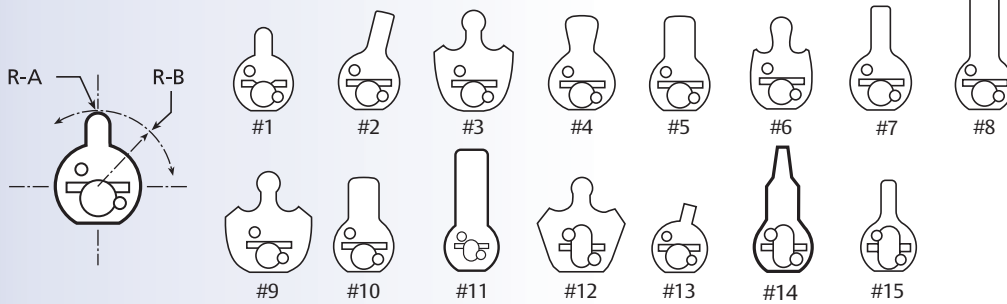
Sidebars

Model#	Description	Price
267008	Sidebar (Specify Side Code) Minimum order 25 pieces	

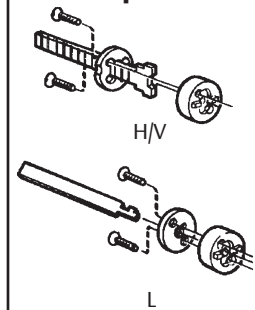
Pins, Spring & Closers

Model#	Description	Pkg. Qty.	Price
807261	Driver Pin 1-2 (A)	100	
807262	Driver Pin 3-4 (B)		
807263	Driver Pin 5-6 (C)		
807264	Driver Pin 7-8-9 (D)		
867070	Master Pin 1		
867071	Master Pin 2		
867072	Master Pin 3		
867073	Master Pin 4		
867074	Master Pin 5		
867075	Master Pin 6		
867076	Master Pin 7		
867077	Master Pin 8		
867078	Bottom Pin 1		
867079	Bottom Pin 2		
867080	Bottom Pin 3		
867081	Bottom Pin 4		
867082	Bottom Pin 5		
867083	Bottom Pin 6		
867084	Bottom Pin 7		
867085	Bottom Pin 8		
867086	Bottom Pin 9		
867065	Cylinder Springs	50	
867015	Twin Side Pins		
353838	V-10 Left Hand Side Pins		
359654	Maximum+ / Twin Maximum Left Hand Side Pins	100	
816080	Twin Pro Side Pins		
807164	Maximum+ / Twin Maximum / V-10 Sidebar Springs		
807165	Maximum+ / Twin Maximum / V-10 Sidepin Springs		
867087	Twin Sidepin Springs		
867088	Twin Sidebar Springs		
868141	Pin Chamber Closing Strips, Mort, Rim, KIK		
867093	Closing Plugs, Oval Cylinders		
806346	Top Closing Screw		

Cam Key: R-A – Head Radius • R-B – Overall Radius



Tailpieces



Cams & Tailpieces

Model#	Description	R-A	R-B	Pkg. Qty.	Price
867445	#1 Adams Rite Cam	0.118	0.555		
867452	#2 Sargent Cam	N/A	0.709		
867446	#3 Corbin Clover Leaf Cam	0.114	0.602		
867447	#4 Corbin Beaver Tail Cam	N/A	0.732		
872610	#5 Yale/Standard Cam	N/A	0.709		
867453	#6 Schlage "L" Cam	0.124	0.516		
805412	#7 Segal Type Cam	N/A	0.779		
806471	#8 Jumbo Corbin Cam	N/A	0.914		
907306	#9 Best 30H Series	0.114	0.602		
353445	#10 Airteq/Norment Cam	N/A	0.787		
809337	#11 Airteq/Norment Mogul Cam	N/A	1.165		
354945	#12 Corbin Jumbo Clover Leaf Cam	0.114	0.828		
355849	#13 Sargent Short Cam	N/A	0.515		
355850	#14 Sargent Mogul	N/A	1.043		
872612	#15 Yale Replacement Cam	0.308	0.742		
867450	Horizontal & Vertical Rim Tailpiece kit				
867451	Lazy-motion Rim Tailpiece kit				
868958	Schlage KIK Plug Cap			10	
868959	Schlage KIK Plug Cap Spring				
868960	Schlage KIK Plug Cap Pin			100	
804877	Schlage Break-off Tailpiece			10	
868654	Corbin New Style Standard-duty Tailpiece			10	
868624	Rollpin - Corbin			10	
868231	Cylinder Plug Retaining Ring			100	
900250	Sargent 6-line, Arrow Tailpiece (short)				
900251	Sargent 6-line, Arrow Tailpiece (long)				
900252	Sargent 6-line, Arrow Tailpiece retaining ring				
900253	Sargent/Arrow Tailpiece (Med.)				
900254	Sargent 11-line T-Zone Tailpiece				
900256	Yale Key-In-Lever Tailpiece				
900257	Yale Key-In-Lever Roll Pin				
867046	Tailpiece Washer			50	
867090	Phillips Screws for Cams, Mortise & Oval Tailpiece				
868138	Slotted Screws for Rim Tailpiece			100	
868134	Tail Extension for Rim Cylinder				
867109	Break-off Tailpiece for V/H Rim Cylinder				
868136	Lazy Motion Tailpiece for Rim Cylinder				
867454	Sargent RC Tailpiece (7 Line Lever)				
867455	Sargent RC Tailpiece (10 Line Lever)				
867456	Sargent RC Tailpiece (11 Line Lever)				

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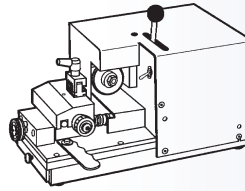
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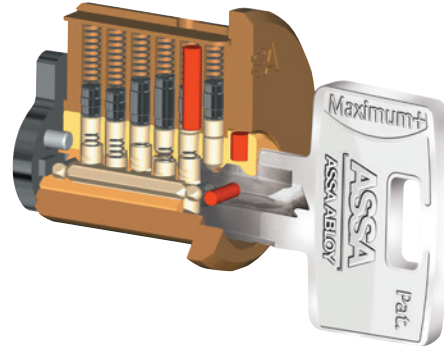
Positive Stop
Code Machine
PS6000T



Pin Kits & Tools

Model#	Description	Price
PK-1	Pin Kit No.1 Full-Size Standard Kit for Twin	
PK-IC	Pin Kit-Interchangeable Core Upgrade	
PK-MM	Micro Mini Pin Kit	
PK-CAM	PK Cam Lock Upgrade	
MPK	Master Pinning Kit Twin & IC	
869018	Twin Series Cutter Wheel for HPC Code Max CM90Z/.032"	
869017	Twin Series Framon Cutter Wheel	
867056	Cutter Wheel for PS-7000R	
KXASDC	Depth Cam for KX-1 ASSA	
KXASSC	Space Cam for KX-1 ASSA	
KXAS01	Cam Set for KX-1	
KXAS02	Cam Set Plus Vise	
KXAS03	Cam Set Plus Cutter	
KXAS04	Cam Set (Cutter Vise)	
F2SH050A	ASSA Vise	
807718	ASSA Lock Spray Lubricant	
816296	ASSA Lock Spray Cleaner/De-Icer	
PS-6000T	Positive Stop Code Key Machine	
907200	PK-1 Pin Kit Box Only	
907205	PK-IC Pin Kit Box IC Only	
907206	MPK Pin Kit Box Only	
907207	Micro Mini Pin Kit Box Only	
907208	Pin Kit Cam Lock Upgrade Box Only	
907009	Clear Deadbolt Mounting Ring	
SGTRCTOOL	Shearing Tool for Sargent style Interchangeable Core	
CRRCTOOL	Shearing Tool for Corbin Russwin style Interchangeable Core	
KD-98	ASSA Key Gauge	
907044	ASSA Plug Follower	
907046	ASSA Screwdriver	
900800	SFIC Ejector Tool	
STAMPING	Key Stamping/Serialization (Any stamping other than keyset or registry ID)	
DND	DO NOT DUPLICATE Key Stamping	
STMP-CORE	Concealed IC Stamping (Other than SFIC)	
MKC	Master Key Upcharge	
KBC	Key Blank Credit	
907060	ASSA Pinning Mat	

ASSA products are the highest quality cylinder products on the market today. The following information for maintaining proper condition of your ASSA cylinders and keys will insure the best performance for you and your clients.

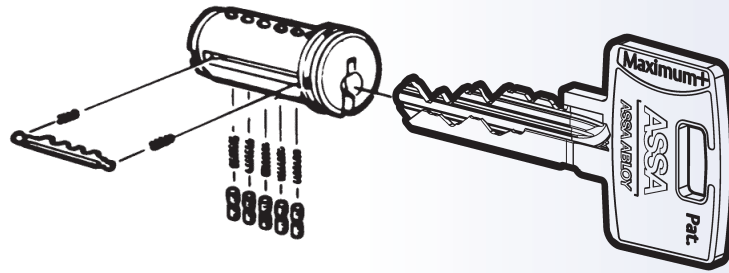


Make sure that all key cutting equipment is properly calibrated in accordance to ASSA manufacturer specification. This is the first consideration in the proper performance of ASSA cylinders. Regularly inspect keys in use and replace any keys that show physical wear immediately.

ASSA cylinders are mechanical devices and like any mechanical device they need regular preventive maintenance. At the time of installation cylinders must be lubricated with ASSA approved lubricant. ASSA recommends part #807718-ASSA Lock Spray Lubricant. Wipe off any excess lubricant on exposed surfaces. Cleaning and lubricating the lock mechanism that the ASSA cylinder is being installed into is important as well. ASSA cylinders should be lubricated at least twice a year as normal maintenance.

- **Do not use graphite or silicone lubricants. Use only ASSA approved lubricants.**
- **Do not expose ASSA cylinders to chemical wash.**
- **Do not paint any cylinder surfaces.**

Do not over lubricate ASSA cylinders. If you suspect cylinder has been over lubricated or suspect excessive dirt or other particles or debris, thoroughly flush with ASSA cleaner de-icer or use an alcohol base electrical contact cleaner that leaves no residue. Let dry or dry with compressed air then re-lubricate with ASSA approved lubricant.



Basic Cylinder Assembly

Step One. Invert the cylinder plug and place the side pin springs in the side pin holes. Insert the side pins.

NOTE! The side pins are all identical. It is imperative that the springs locate correctly or the cylinder will malfunction.

Step Two. With the cylinder still inverted, insert a key with the correct side code to hold the side pins in place.

Step Three. Position the short sidebar springs at each end of the sidebar slot.

NOTE! It is imperative that the springs are located in the prepared holes.

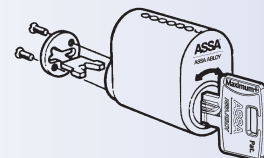
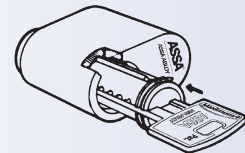
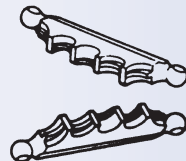
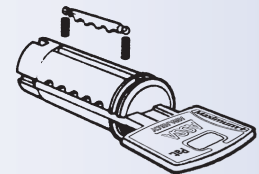
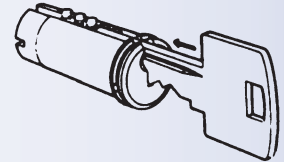
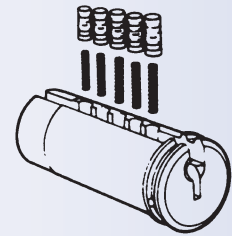
Step Four. Lay the sidebar in the slot so that the fences correspond to the opening gates in the side pins. It should now be possible to press the sidebar down in its slot so that it is flush with the outer face of the cylinder plug.

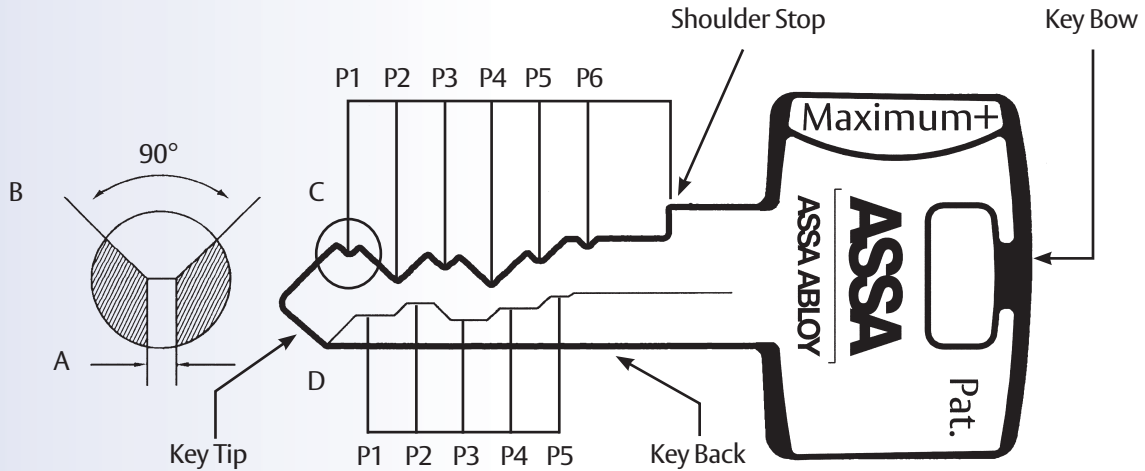
NOTE! The key should remain in the cylinder plug during this operation.

Step Five. Place the cylinder plug in the cylinder house. If the sidebar is fitted correctly, the cylinder plug can now be turned within the shell. Hold the cylinder plug in place when withdrawing the key.

Step Six. Fit the tailpiece and secure.

Note: Cylinder plug diameter is .510".





A. 0.8mm (0.032") wide flat base.

B. 90° cutting angle.

C. The six top cut positions are counted from tip to bow at nine depths of cut.

D. The five side cut positions are counted from tip to bow at five depths of cut and are restricted to factory production only.

The chart below only references top cut spacing.

Measurement	P1	P2	P3	P4	P5	P6
mm	25.7	21.9	18.1	14.3	10.5	6.7
Inch	1.0118	0.8622	0.7126	0.5630	0.4134	0.2638
Tolerance	+0.02 / -0.03mm +0.0008 / -0.0012					

General Rules

The cut depth should be measured from the back of the key to the bottom of the cut.

Spacing is calculated from the shoulder of the key.

The key combinations are cut from the tip of the key towards the bow.

The system code must be cut at 90° cutting angle and a 0.8mm (0.032") wide flat base.

No.1 cut is deepest cut, no. 9 is shallowest.

Maximum Adjacent Cut Specification (MACS) = 5.

Example: 1 cut adjacent to 6 cut is acceptable.

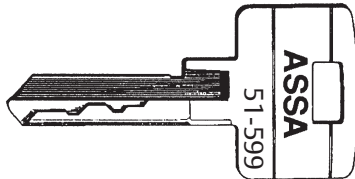
1 cut adjacent to 7, 8, or 9 cut NOT acceptable.

Depths: Key Combinations		
Normal depths for key combinations		
Depths:	mm	Inch
N0. 1	4.03	0.1587
N0. 2	4.63	0.1823
N0. 3	5.23	0.2059
N0. 4	5.83	0.2295
N0. 5	6.43	0.2531
N0. 6	7.03	0.2768
N0. 7	7.63	0.3004
N0. 8	8.23	0.3240
N0. 9	8.83	0.3476
Measure from back of key to bottom of cut		
Tolerance	+ 0.00 - 0.04mm	
	+0.00" - .0016"	

Ordering:

When ordering key blanks, the profile and geographically assigned code must be stated.

A. Side bar Code is cut at ASSA Factory only. Key blanks are provided as shown.



B. Side bar code/profile can be identified on key bow. Example: for Twin 6000 Series, 51-599; there are 5 different profiles in the ASSA Twin 6000 Series which are; 50, 51, 52, 61, and 62.



Key Stamping:

All new key blanks and cut keys will be stamped as original from factory in accordance with assigned keyway.



Maximum+
Profile 0A7



Maximum+ SFIC
Profile 0B7



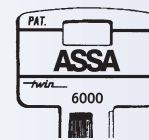
Twin Maximum
Profile 0M7



Twin Pro
Profile 0P4



Twin Exclusive
Profile 851



Twin 6000
Profiles
50, 51, 52, 61, 62



Twin V-10
Profile 95

Key Cutting:

Key combination can be cut on many code machines and duplicating machines. Code cutting machines historically, produce better keys than Key-duplicating machines. The ASSA key is a quality key. ASSA recommends quality cutters. ASSA supplies cutting wheels for the HPC 1200 CM and Code Max code machine as well as cutters, vises, and cams for Framon KX1.

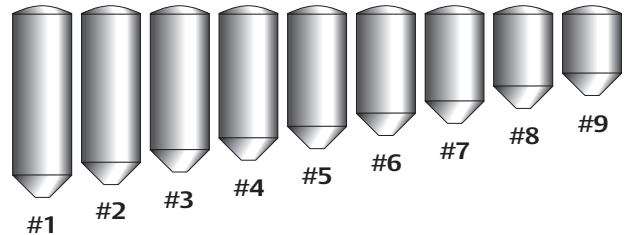
ASSA Recommended Code Machines:

- ASSA PS-6000T (Made by Framon)
- Any Framon Machine designed to cut ASSA Twin and Max+ Series keys
- Silca Ultra Code 199
- HPC Code Max
- ITL 9700 Series Code Machine

ASSA Twin Series Pinning

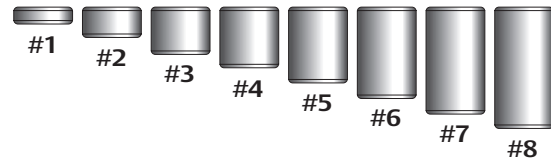
The same bottom and master pins used in all ASSA Twin Series, Maximum+, and 600 Series product are made of high-quality nickel silver. The deepest cut on a Twin Series and Maximum+ key is the #1 length and the shallowest is the #9 length. This makes the #1 pin the longest and the #9 pin the shortest. All pins are 0.114" in diameter.

Bottom Pin Part Numbers & Lengths		
Pin Size	Part Number	Length
#1	867078	0.3503"
#2	867079	0.3267"
#3	867080	0.3031"
#4	867081	0.2795"
#5	867082	0.2559"
#6	867083	0.2322"
#7	867084	0.2086"
#8	867085	0.1850"
#9	867086	0.1614"



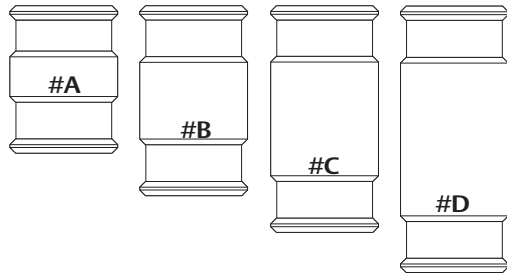
Pins for ASSA cylinders do not taper to a ball nose radius like most pin tumbler pins, but have a flat tip that is 0.020" in diameter. This provides more reliable contact between tumbler and key.

Master Pin Part Numbers & Lengths		
Pin Size	Part Number	Length
#1	867070	0.0236"
#2	867071	0.0472"
#3	867072	0.0708"
#4	867073	0.0944"
#5	867074	0.1181"
#6	867075	0.1417"
#7	867076	0.1652"
#8	867077	0.1889"



ASSA Twin master pins are engineered for single step \masterkeying, creating the largest master key capabilities of any pin tumbler lock in production.

By numbering from the smallest to the largest, pinning may easily be calculated by subtracting the master pin number from the bottom pin number. (i.e. 7 - 3 = 4. A #3 master pin with a #7 bottom pin is the same physical length as a #4 bottom pin alone.) If the master pin (or pins) leave a remainder of less than one when subtracted from the bottom pin, the overall stack height of the chamber is wrong.

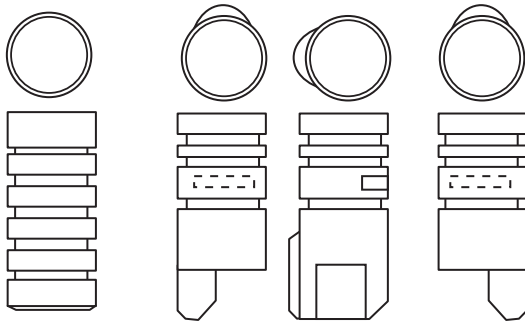


Top Pin Part Numbers & Uses		
Driver	Part Number	Stack Height
A	807261	1 or 2
B	807262	3 or 4
C	807263	5 or 6
D	807264	7 or 8 or 9

Example: When using a #4 bottom pin, a B top pin (driver) is required for proper stack height in the chamber. A #7 bottom pin and a #3 master pin would also require a B top pin.

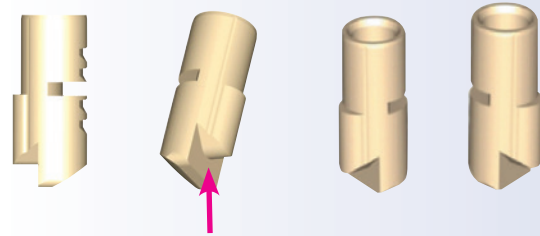
KIK & KIL cylinders measuring 1.020" in the CH dimension listed in the product section will use a modified pin stack. This is done by calculating the required top pin and then using one size smaller in the cylinder, i.e. using an A top pin instead of a B in the above example. If the shortest top pin (A) needs to be shortened, a #5 master pin should be substituted. The #5 master pin is one increment step shorter than the A top pin.

Top Pins/Spool Drivers	
Height	Width
A – 4 mm/0.15 inch	2.9 mm/0.114 inch
B – 5 mm/0.19 inch	2.9 mm/0.114 inch
C – 6 mm/0.23 inch	2.9 mm/0.114 inch
D – 7 mm/0.27 inch	2.9 mm/0.114 inch



Twin 6000 & Twin Exclusive Side Pin

Left hand & right hand Twin V-10 side pins flanking a side view.



Twin Pro Side pin drawing on the left shows the back of the Twin Pro side pin and its lift point.

Twin Maximum and Maximum+ side pins are available in left or right hand similar to V-10.

Like the Twin Pro side pin, the Twin Maximum and Maximum+ side pins are lifted at the bottom of the centering tab.

There are six different types of side pins used in ASSA High Security Twin Series and Maximum+ cylinders. The Twin 6000 and Twin Exclusive use one type of side pin with two false grooves above and below the opening gate.

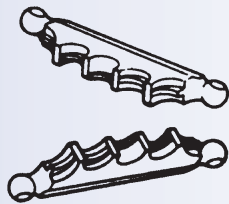
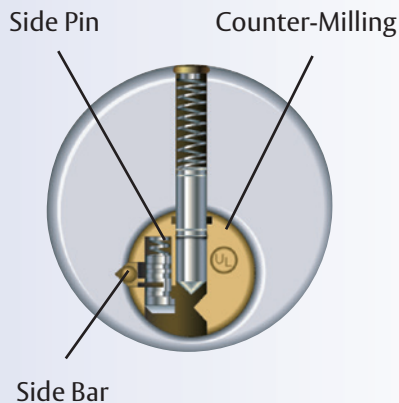
Twin Series and Maximum+ Series side pins are lifted by the side cut on the key blank to a proper height to match the fence pattern on the geographically controlled side bar.

There are two different Twin V-10 side pins, left or right hand. Four false side grooves are provided for pick resistance. The Twin V-10 side pin has an eccentric shape and must be properly positioned before insertion in the side pin chamber of the plug. Left and right hand side pins offer the flexibility to utilize multiplexing capabilities.

The Twin Pro side pin is similar to the design of the Twin V-10 but there is only one type for all five side pin positions. This side pin design is lifted at the back of the pin rather than the bottom surface.

Twin Maximum and Maximum+ side pins are available in left and right hand offering the flexibility of multiplexing similar to Twin V-10. The ASSA Twin Maximum and Maximum+ series cylinder is the mechanical platform that is integrated by CLIQ and CLIQ Remote electromechanical keys and cylinders.

Side Bar Operation



There are five side pins in every ASSA Twin and Maximum+ Series cylinder. In the Twin 6000 and Twin Exclusive, there is only the one type of side pin and for the Twin V-10 Series there are left-hand and right-hand side pins. ASSA Twin Pro has yet another single type of side pin. For Twin Maximum and Maximum+ there are left- and right-hand side pins similar to Twin V-10 for multiplexing capability

The actual side code combination is machined into the side bar itself and again on the side cut of the Twin Series and Maximum+ key.

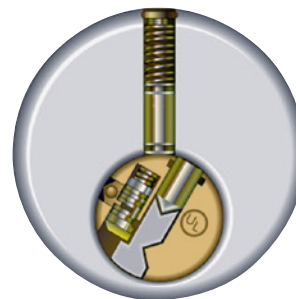
The purpose of the side pins is to align the opening gate by the side-cut milled on the side of the key that will align the side pin with the coded side bar fence. If they match, then the side bar will be unlocked.

With five depths in each position and five positions on each side bar, there are 3,125 different side codes possible. ASSA has 2,805 available. ASSA Twin side codes are assigned to dealers, distributors and end-users on a restricted geographical basis.

ASSA refers to the sidecode as an “intelligent” keyway that is unique to the market area of each dealer and end-user. The sidecode assures ultimate key control while the technicians have total control of the keying and pinning.

ASSA sidebars are reversible. Each sidebar is assigned with two matching key blanks, the obverse and reverse side codes. Twin V-10, Twin Maximum, and Maximum+ operations are capable of additional key blanks, and these capabilities are assigned only by and from the factory.

Note: Plug diameter is .510".



ASSA Master Keying Capability

ASSA offers single step progression master key systems. Unlike most standard progression systems that are restricted to two step progression, industry standards require a minimum of .023" from one step increments to the next for all lock manufacturers in order to prevent unwanted interchange in master key systems.

Considering ASSA's high tolerance and approximate 0.024" step increments, its nine depths of cut in six

positions offers considerably more theoretic and usable combinations than any other lock manufacturer on the market today.

Figure 1 shows a standard two step progression chart. If the last three columns are progressed, the theoretic total change keys under a single master key would be 64 change keys on a page. If the first three columns were then progressed, there would be 64 pages for a total of 4,096 theoretic change keys under a single master key. If we were to consider that there is a MACS of 7, this system would yield approximately 3,000 usable change key combinations.

Figure 1

TMK	2	5	8	3	6	9
	4	7	0	5	8	1
K	6	9	2	7	0	3
B	8	1	4	9	2	5
A	0	3	6	1	4	7

64 pages

64 changes per page

Figure 2

TMK	1	2	6	9	5	8
	2	3	7	1	6	9
	3	4	8	2	7	1
K	4	5	9	3	8	2
B	5	6	1	4	9	3
A	6	7	2	5	1	4
	7	8	3	6	2	5
	8	9	4	7	3	6
	9	1	5	8	4	7

Figure 2 shows ASSA's single step progression chart. If we were to progress only the last two columns, we would get a theoretic total of 64 change keys on a page. If we then progressed the two center columns, we would then get a theoretic total of 64 pages. So you see, we have already matched the total 4,096 theoretic change keys in the first exercise from Figure 1, but only four of our six chambers have been progressed. Now let's progress the first two columns to get 64 volumes, of 64 pages, of 64 changes per page. This gives us a theoretic total of 262,144 change keys under a single master key. With a MACS of 5 we typically lose about one half of our theoretic total, still yielding about 130,000 and in some cases as many as 160,000 usable change key combinations under a single master key, on each of our 1,402 available reversible sidebars.

Calculating Pin Stacks

Always choose the bottom pin, in a given chamber, by comparing the cuts in that chamber. Always select the highest number for the bottom pin since that would be the shortest possible pin. Next, subtract the remaining cut to obtain the master pin needed. The driver pins are calculated by subtracting the master pins from the bottom pins, chamber by chamber. In the case of stacked master pins always total the master pins then subtract that number from the bottom pin.

Example:

AA - 495599	AB - 495499	AC - 495699
AA1 - 495524	AB1 - 495464	AC1 - 495625
AA2 - 495536	AB2 - 495438	AC2 - 495644
AA3 - 495562	AB3 - 495426	AC3 - 495637

The following would describe typical pinning arrangements for bottom, master and driver pins from our sample systems.

495799	"AA" Key	495799	"GMK" Key
495327	"1AA" Key	495599	"AA" Key
		495536	"AA2" Key
495799	Bottom Pins	495799	Bottom Pin
-- -472	Master Pins	-- -263	Master Pins
BDCBAD	Top Pins	BDCCBC	Top Pins

ASSA C-4 CLIQ & CLIQ Remote

The ASSA CLIQ technology is designed with the advantages of both electronic access control and mechanical key systems making it suitable for organizations spread over wide geographic areas. The ASSA CLIQ features time schedule access control, the ability to grant or deny authorizations electronically and provide an audit trail. This unique technology provides a high security key and cylinder combination requiring no power source of any kind at the opening.

For more detailed information please see pages 15 & 16 or visit our website www.assalock.com and select the "Products" tab.

Considerations for Master Key System design

There is a black power and data transfer strip inserted alongside the CLIQ electromechanical keys as part of the electronics. When designing a masterkey system where CLIQ will be used there is a cut depth restriction in the sixth position. A number one or two depth of cut can not be used so that the black power and data strip is not damaged when cutting the key. Clamping the key into a the vice jaw of a key duplicating or code cutting machine will also damage the black power and data transfer strip. CLIQ keys, are always cut at the factory.



Black power and data transfer strip

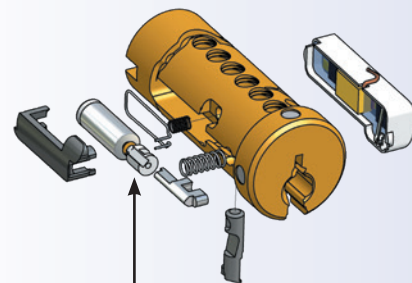
Servicing ASSA CLIQ cylinders

The ASSA CLIQ electronic components, Motor and actuator are sealed in the cylinder plug and are not field serviceable. All ASSA CLIQ cylinders are keyed at the factory.

Lubrication

The only approved lubricant is the ASSA Lock Spray part number 807718.

The ASSA Lock Spray is conductive and the formula resists collection of dust and dirt. Any other lubricant used can mask the contact read for power and data transfer.



A motor drives the electromechanical blocking element that locks the side rail.

ASSA Large Format Interchangeable Core, ASSA Yale & ASSA Corbin Russwin LFIC

With the discontinuation of the ASSA removable core (RC) product, in 1996 ASSA introduced a new Large Format Interchangeable core (LFIC) product which may be mounted in the same figure eight housing as the old product.

The new LFIC product is designed to be compatible with systems written for the old product and may even safely be supplied as expansion in some key systems not originally designed with the RC or LFIC product in mind.

VALUES

C	= Control Bitting	CK	= Change Key Bitting
BP	= Bottom Pin	MK	= Master Key Bitting
MP	= Master Pin		
BUP	= Build-up Pin		
TP	= Top Pin		
Stack	= 20		

This LFIC has a control “sleeve” in the first four pin chambers and pinning for those chambers is calculated using specific formulas to determine the two top components of the pin stack. The TOP PIN (TP) is determined from the control KEY combination, simply add one to the bitting of the control key in the first four positions to determine the size of the top pin for the corresponding pin chamber.

$$TP = C + 1$$

The sizes of the BOTTOM PIN (BP) and MASTER PIN (MP) are determined using the normal method. The only other component in the stack is the buildup pin and the following formula will give you the correct size to use in the pin chamber.

Master Keyed	Non-Master Keyed
BP = MAX (CK/MK)	BP = CK
MP = ABS (CK-MK)	MP = 0
TP = C + 1	TP = C + 1
BUP = 20 - {TP + [10 - (BP-MP)]}	BUP = 20 - [TP + (10-CK)]

If the particular chamber is cross keyed, it will have more than one master pin in it and the formula should be modified to reflect that condition. The pinning for the last two pin chambers should be calculated in the same manner used for ASSA non-IC products.

Using the formula isn't any more difficult than adding and subtracting. The example here is for a master keyed LFIC cylinder, and this formula will apply to the first four pin chambers only. As with all formulas, it should be worked from the inside out. Our keys for this cylinder are:

CTRL	216499
AA	495799
1AA	642799

The Top Pin is calculated as CTRL Biting + 1, in this case.

Pin Chamber 1

CTRL Biting 2 + 1 = 3 TP

Pin Chamber 2

CTRL Biting 1 + 1 = 2 TP

Pin Chamber 3

CTRL Biting 6 + 1 = 7 TP

Pin Chamber 4

CTRL Biting 4 + 1 = 5

The only pin size we don't now know is the BUP (Build-up Pin). The formula will tell us that.

$$BUP = 20 - \{ TP + [10 - (BP - MP)] \}$$

Pin Chamber 1

$$BUP = 20 - \{ 3 + [10 - (6 - 2)] \}$$

Pin Chamber 2

$$BUP = 20 - \{ 2 + [10 - (9 - 5)] \}$$

Pin Chamber 3

$$BUP = 20 - \{ 7 + [10 - (5 - 3)] \}$$

Pin Chamber 4

$$BUP = 20 - \{ 5 + [10 - (7 - 0)] \}$$

$$BUP = 20 - \{ 3 + [10 - 4] \}$$

$$BUP = 20 - \{ 2 + [10 - 4] \}$$

$$BUP = 20 - \{ 7 + [10 - 2] \}$$

$$BUP = 20 - \{ 5 + [10 - 7] \}$$

$$BUP = 20 - \{ 3 + 6 \}$$

$$BUP = 20 - \{ 2 + 6 \}$$

$$BUP = 20 - \{ 7 + 8 \}$$

$$BUP = 20 - \{ 5 + 3 \}$$

$$BUP = 20 - 9$$

$$BUP = 20 - 8$$

$$BUP = 20 - 15$$

$$BUP = 20 - 8$$

$$BUP = 11$$

$$BUP = 12$$

$$BUP = 5$$

$$BUP = 12$$

From this formula we know that the pinning of the cylinder would be:

TP 3 2 7 5 D D

BUP 11 12 5 12 - -

MP 2 5 3 - - -

BP 6 9 5 7 9 9

The build-up pin may be any size from 1 up to 17. As part of the product release we have created 9 new master pins for use as build-up pins. They are numbered 9 through 17. In conjunction with this product release ASSA has produced nine new top pins 2 through 10. These new top pins have a recess drilled into the top of them to accept the new, smaller diameter top pin spring which must be used in the first four control sleeve chambers of the cylinder.

If you are generating your own key systems, there are some new combination selection rules which should be followed for the TMK and the CTRL (Control Key).

1) The TMK should have a number 9 depth as one of the first four cut positions and the corresponding position in the CTRL key should be a number 1 depth.

2) The last two cut depths of the CTRL key should be the same as the TMK.

With the exception of the preceding rules, the other cut positions in the CTRL key may be any depth except the TMK depth. The combination used for the CTRL key should be removed from the key system if it is generated as part of the progression.

ASSA Sargent Large Format Interchangeable Core

Follow the same formula and rules as specified for the ASSA Large Format Interchangeable & Yale & Corbin Russwin LFIC but change the stack to 19.

IMPORTANT: If the build-up pin (BUP) is equal to 0 no build-up pin is used.

CTRL	216969
AA	495769
1AA	642169

The Top Pin is calculated as CTRL Bitting + 1, in this case.

Pin Chamber 1	Pin Chamber 2	Pin Chamber 3	Pin Chamber 4
CTRL Bitting 2 + 1 = 3 TP	CTRL Bitting 1 + 1 = 2 TP	CTRL Bitting 6 + 1 = 7 TP	CTRL Bitting 9 + 1 = 10
Pin Chamber 1	Pin Chamber 2	Pin Chamber 3	Pin Chamber 4
TP = 2 + 1 = 3	TP = 1 + 1 = 2	TP = 6 + 1 = 7	TP = 9 + 1 = 10

The only pin size we don't now know is the BUP (Build-up Pin). The formula will tell us that.

$$BUP = 19 - \{ TP + [10 - (BP - MP)] \}$$

Pin Chamber 1	Pin Chamber 2	Pin Chamber 3	Pin Chamber 4
BUP = 19 - {3 + [10 - (6 - 2)]}	BUP = 19 - {2 + [10 - (9 - 5)]}	BUP = 19 - {7 + [10 - (5 - 3)]}	BUP = 19 - {10 + [10 - (7 - 6)]}
BUP = 19 - {3 + [10 - 4]}	BUP = 19 - {2 + [10 - 4]}	BUP = 19 - {7 + [10 - 2]}	BUP = 19 - {10 + [10 - 1]}
BUP = 19 - {3 + 6}	BUP = 19 - {2 + 6}	BUP = 19 - {7 + 8}	BUP = 19 - {10 + 9}
BUP = 19 - 9	BUP = 19 - 8	BUP = 19 - 15	BUP = 19 - 19
BUP = 10	BUP = 11	BUP = 4	BUP = 0 (no BUP is used in this chamber)

From this formula we know that the pinning of the cylinder would be:

TP	3	2	7	10	C	D
BUP	10	11	4	-	-	-
MP	2	5	3	6	-	-
BP	6	9	5	7	6	9

The build-up pin may be any size from 1 up to 17. As part of the product release we have created 9 new master pins for use as build-up pins. They are numbered 9 through 17. In conjunction with this product release ASSA has produced nine new top pins 2 through 10. These new top pins have a recess drilled into the top of them to accept the new, smaller diameter driver spring which must be used in the first four control sleeve chambers of the cylinder.

If you are generating your own key systems, there are some new combination selection rules which should be followed for the TMK and the CTRL (Control Key).

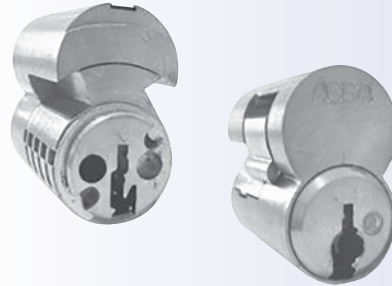
- 1) The TMK should have a number 9 depth as one of the first four cut positions and the corresponding position in the CTRL key should be a number 1 depth.
- 2) The last two cut depths of the CTRL key should be the same as the TMK.

With the exception of the preceding rules, the other cut positions in the CTRL key may be any depth except the TMK depth. The combination used for the CTRL key should be removed from the key system if it is generated as part of the progression.

ASSA Sheering Tool for Sargent and Corbin Russwin LFIC Original Housings

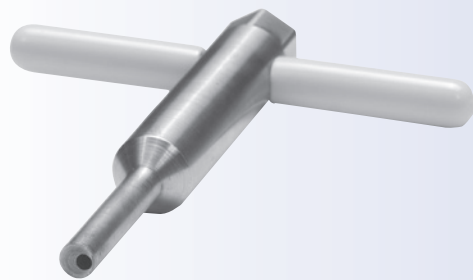


Sargent 6 Pin LFIC



Corbin Russwin 6 Pin LFIC

The ASSA Sargent & Corbin Russwin retrofit LFIC cores require a sheering tool to cut the drive pin in existing Sargent or Corbin Russwin housings that is in line with the ASSA side bar. This simple and effective hand tool is inserted fully into the figure 8 opening of a Sargent or Corbin Russwin LFIC housing over both drive pins. The T handle is inserted into the large opening on the left and turned shearing the left drive pin to the proper length.



Model

CRRCTOOL
SGTRCTOOL

Description

Sheering Tool for Corbin Russwin style IC
Sheering Tool for Sargent style IC

ASSA Schlage Removable Core

The Schlage removable core has a control sleeve in the first cut position at the ASSA key tip

Only the number 8 or 9 depth of cut can be used for the operating keys

The control key can be cut to the 1, 2, 3 or 4 depth of cut only, in the first position at the ASSA key tip.

A build-up pin hollowed top pin and an ASSA IC top pin spring is used in the first chamber position to engage the control sleeve and drive blocking pin to lock or unlock the core in the Schlage original housing.

No master pinning is allowed in the control chamber position. Positions 2 through 6 can be used for normal ASSA master pinning.

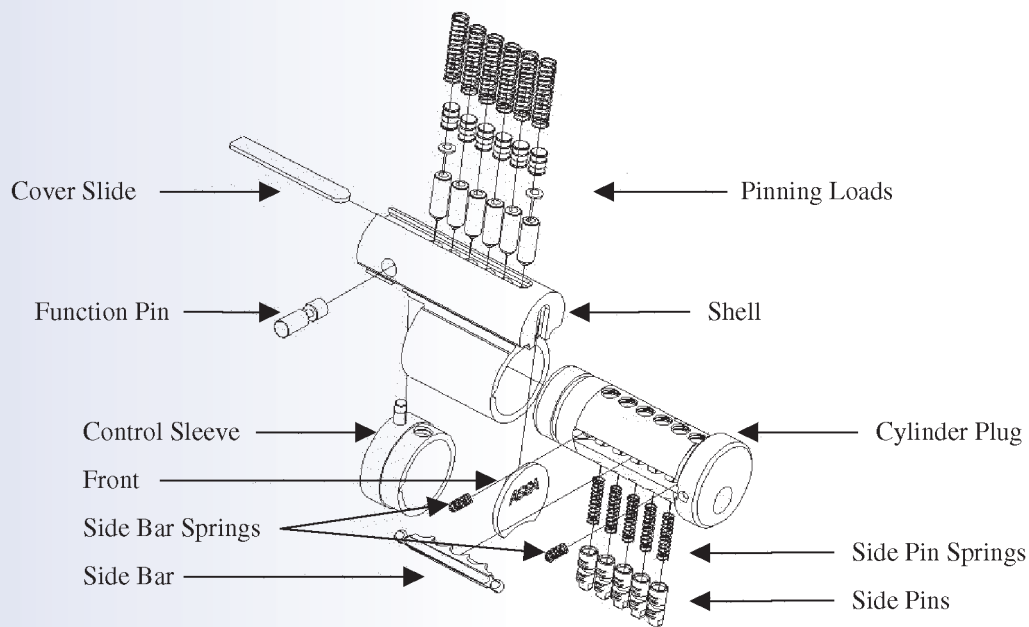
Calculating the loads is as follows:

The Top Pin is equal to the control cut plus 6

$$TP = CTRL + 6$$

The build-up pin is equal to the operating cut minus the control cut plus 2

$$BUP = 2 + (\text{Operating Cut} - \text{CTRL Cut})$$



The chart below shows pinning combinations available in the first pin chamber position.

Schlage Removable Core pinning combinations for 1st position.

CTRL Cut	Operating Cut	Build-up Pin	Top Pin
1	8	9	7
1	9	10	7
2	8	8	8
2	9	9	8
3	8	7	9
3	9	8	9
4	8	6	10
4	9	7	10
Build-up pins and hollowed top pins can be found in the ASSA PK-IC upgrade pinning kit, MPK pinning kit or purchased separately.			

Note: Positions 2 through 6 use the ASSA modified pin stacks by downsizing top pins by one increment.

ASSA Small Format Interchangeable Core

The pinning format is not similar to the traditional Best A2 or A4 specification. The pinning format is unique to ASSA SFIC.

Only 6 pin cores available.

The depth and spacing is the same as all ASSA Twin keys, except for the #9 depth cut is not available.

Direction of cuts is from tip to bow.

Single step progression is used.

MACS = 5

General rules:

6 pin chambers

8 heights, 1 to 8

In any of the pin chambers 1-6 the keys need to be different between control key and operating keys in at least one position.

In at least one pin chamber the control key must be lower than any operating key.

The control key can be a maximum of 5 increments higher than the operating key in any pin chamber.

Bottom Pins = calculated per usual

Master Pins = calculated per usual

Build Up Pins = [bottom pin] – [all master pins] – [control key code] + 5 (0=No build up pin)

Driver (Top) Pins = [control key code] + 1

Stack height calculation = top pin + master pin(s) + BUP - bottom pin = 6 (always)

Example:

Control key	4	6	4	8	7	6
Master key	3	2	6	5	2	4
Change key	1	2	6	8	5	8

TP	5	7	5	9	8	7
BUP	2	1	7	2	0	3
MP	2	0	0	3	3	4
BP	3	2	6	8	5	8

BP	3	2	6	8	5	8
----	---	---	---	---	---	---

MP	-2	0	0	-3	-3	-4
----	----	---	---	----	----	----

	1	2	6	5	2	4
CB (Control Biting)	-4	-6	-4	-8	-7	-6

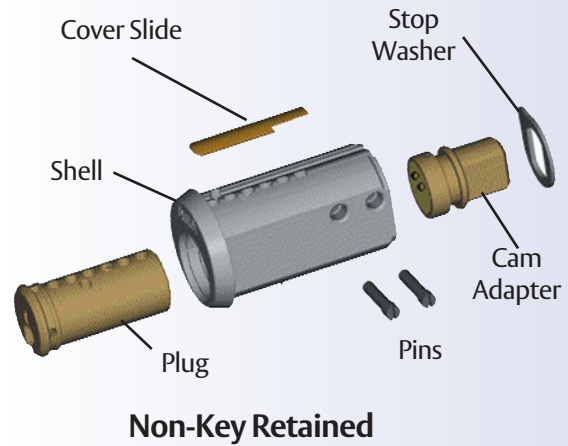
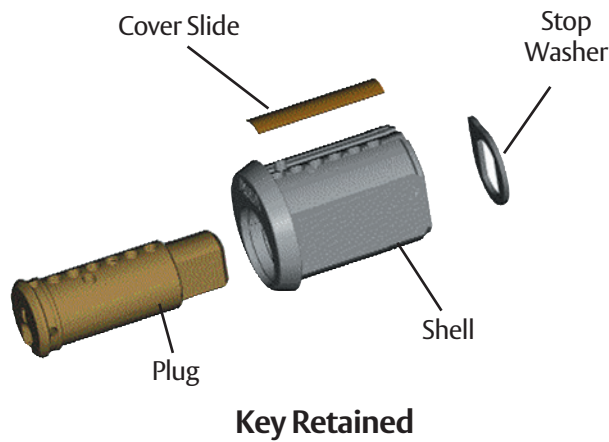
	-3	-4	2	-3	-5	-2
--	----	----	---	----	----	----

Plus 5	5	5	5	5	5	5
--------	---	---	---	---	---	---

BUP	2	1	7	2	0	3
-----	---	---	---	---	---	---

Stack height calculation: top pin + master pin(s) + BUP – bottom pin = 6 (always)

TP	5	7	5	9	8	7
BUP	2	1	7	2	0	3
MP	2	0	0	3	3	4
BP	-3	-2	-6	-8	-5	-8
Stack =	6	6	6	6	6	6



ASSA cam locks are serviced with standard Twin bottom and master pins. The tops pins, or drivers and springs used in ASSA cam locks are the hollowed top pins used in the ASSA Interchangeable Core product T-2 through T-9. The top pin used in each chamber is equal to the total operating stack. A #7 bottom pin uses a T-7 top pin. For master keying a #5 bottom pin – a #3 master pin equals a total operating stack of 2. The T-2 top pin is used. Due to stack height restrictions the #1 depth of cut cannot be used in ASSA cam locks.

Top Pin #2 – 809328

Top Pin #3 – 809329

Top Pin #4 – 809330

Top Pin #5 – 809331

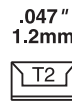
Top Pin #6 – 809332

Top Pin #7 – 809333

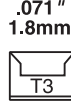
Top Pin #8 – 809334

Top Pin #9 – 809335

IC Core Chamber Spring – 809340



809328



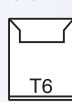
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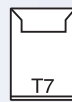
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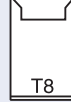
809331



809332



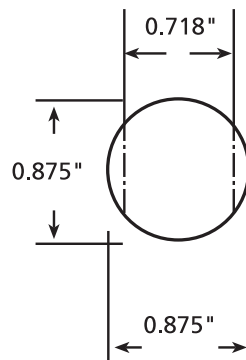
809333



809334



809335



For metal installation use 7/8" double D punch.

Security Authorization Procedure

- Locksmith is encouraged to use the ASSA-343 form card shown below to register their customers signatures.
- Customer would then be required to sign an ASSA-312 form in order to receive additional cut keys for subsequent orders.
- Locksmith should check signature(s) on the ASSA-343 form registration card and verify that it matches the signature on the ASSA-312 form.
- Personal identification should also be requested for additional customer protection.

ASSA	
ASSA ABLOY	
SIGNATURE REGISTRATION CARD # _____	
This card is to be used in conjunction with ASSA® restricted key systems. The names and corresponding signatures will establish individuals authorized to order additional cut keys and locks for specific key systems. In the event of a change in authorized personnel a letter must be submitted on company letterhead bearing the signature of one of the individuals stated below.	
END USER	1 _____ OWNER'S NAME (Please type or print) _____ _____ STREET ADDRESS _____ _____ CITY / STATE / ZIP CODE _____ _____ DATE / /
	2 _____ SIGNATURE _____ _____ TYPE OR PRINT NAME _____ _____ SIGNATURE _____
END USER	

[illegible]

	1	2	3	4	5	6
1	E	F	J	B	G	A
2	J	A	B	C	D	F
3	F	C	D	J	H	E
4	C	H	A	D	B	J
5	D	G	F	E	J	H
6	B	D	E	H	A	G
7	H	B	G	F	C	D
8	G	J	H	A	E	C
9	A	E	C	G	F	B

ASSA Blind Code Key Decoder.

ASSA-312 FORM

- The ASSA-312 form may be used to verify customer signatures at the time of sale and issuance of cut keys.
- Customer will sign the form in the signature block portion, date the signature and copy any stamping information in the space provided.
- Locksmith will check the signature against the original ASSA-343 signature registration card to verify and authorize key cutting.
- Form number is then recorded on the back side of the ASSA-343 card.

RESTRICTED KEY ORDER FORM
USE WITH AUTHORIZATION CARD

X Only one circle below for quantity of keys required.

1	2	3	4	5	6	7	8	9
10	15	20	25	30	35	40	45	50
55	60	65	70	75	80	85	90	100

I hereby certify that I am the owner or authorized agent of the owner of the lock cylinder(s) for which key(s) are being produced, and as such authorize the above merchant to process the order for said keys.

IF YOUR KEY IS PART OF A MASTER KEY SYSTEM, COPY THE NUMBER STAMPED ON THE KEY HERE ►

SIGNATURE

DATE

ASSA 312
2895

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Finishes Available – Commercial & Industrial Locks



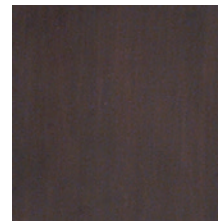
05
(US03)
Bright Brass



06
(US04)
Satin Brass



09
(US5)
Antique Brass



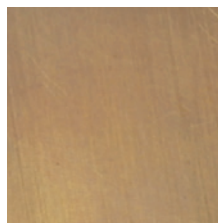
10
Satin Brass
Blackened



11
(US9)
Bright Bronze



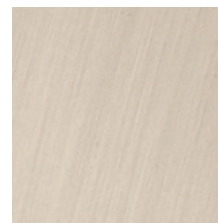
12
(US10)
Satin Bronze



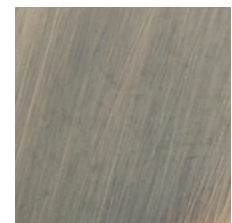
13
(US10B)
**Dark Bronze/
Oil Rubbed**



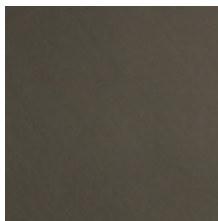
18
(US14)
Bright Nickel



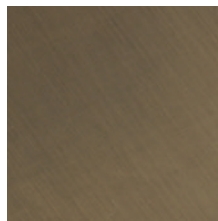
19
(US15)
Satin Nickel



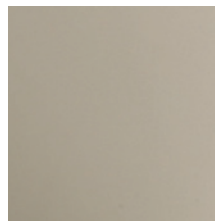
20
(US15A)
Antique Nickel



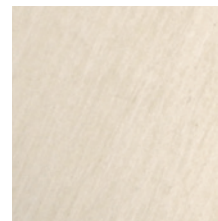
22
(US19)
Flat Black



24
(US20A)
**Dark Bronze/
Clear Coat**



25
(US26)
Bright Chrome



26
(US26D)
Satin Chrome

Note: Product appearance may differ from this chart as a result of the differences in plated versus printed materials.



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Website: www.assaabloydss.ca



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access control and service.