Lock Key and Pin Specification Reference Sheet
Version 1
Assembled by Holonium

Author's Note:

Please contact me if you find any errors in this document, I will work my best to correct them as soon as possible, my Discord username is Holonium#4616. I am putting this document together as I have grown frustrated by the large number of specification sheets that I must have in my binder, and I am planning on condensing it. You will also find some useful tools such as a guide on gutting locks (at some point), and some SFIC pinning worksheets included in this document. As time goes on, I will improve the formatting, and condense the document even more, which will mean having multiple locks on the same page. For Corbin, Russwin, and Corbin-Russwin locks, see the end of the sheet for the build-up pin lengths.

American Lock
Pin diameter: 0.094"
Core diameter: 0.4"
MACS: 4
Keys are read bow to tip

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
1	0.110"	N/A	0.140"	0.284"
2	0.126"	0.031"		0.2684"
3	0.140"	0.046"		0.2528"
4	0.156"	0.062"		0.2372"
5	0.172"	0.078"		0.2215"
6	0.190"	0.094"		0.2059"
7	0.202"	0.110"		0.1903"
8	0.220"	N/A		0.1747"

ASSA Twin Systems:
ASSA locks are made to tight tolerances, and are full of security pins, which will be covered in a separate sheet. A good site to visit is www.assamow.com.
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: 5
Keys are read tip to bow

Pin Size	Key pin length	Master pin length	Cut depth
1	0.3503”	0.0236”	0.1587”
2	0.3267”	0.0472”	0.1823”
3	0.3031”	0.0708”	0.2059”
4	0.2975”	0.0944”	0.2295”
5	0.2559”	0.1181”	0.2531”
6	0.2322”	0.1417”	0.2768”
7	0.2086”	0.1652”	0.3004”
8	0.1850”	0.1889”	0.3240”
9	0.1614”	N/A	0.3476”

In addition, ASSA locks have balanced pin stacks, which will be recorded in the following table.

Driver Pin	Driver Pin(KIK)	Pin length	Stack height
A	#5	0.15”(0.1181”)	1,2
B	A	0.19”	3,4
C	B	0.23”	5,6
D	C	0.27”	7,8,9

BEST SFIC Systems:
Pin diameter: 0.108”
Core diameter: 0.40”?
MACS: None
The A2 and A4 systems are the most common ones in use
The pin stack totals are 23 for A2, 16 for A3, and 14 for A4
Keys are read tip to bow.
The pinning constants are 10 for A2, 7 for A3, and 6 for A4
The decoding constants are 13 for A2, 9 for A3, and 8 for A4

Pin Size(A2)	Key pin length	Top pin length
0	0.110”	N/A
1	0.1225”	0.0125”
2	0.135”	0.025”
3	0.1475”	0.0375”
4	0.160”	0.050”
5	0.1725”	0.0625”
6	0.185”	0.075”
7	0.1975”	0.0875”
8	0.210”	0.100”
9	0.225”	0.1125”
10	N/A	0.125”
11		0.1375”
12		0.150”
13		0.1625”
14		0.175”
15		0.1875”
16		0.200”
17		0.2125”
18		0.225”
19	0.3475”	0.2375”

Pin Size(A3)	Key pin length	Top pin length
0	0.110”	N/A
1	0.128”	0.018”
2	0.146”	0.036”
3	0.164”	0.054”
4	0.182”	0.072”
5	0.200”	0.090”
6	0.218”	0.108”
7	N/A	0.126”
8		0.144”
9		0.162”
10		0.180”
11		0.198”
12		0.216”
13	0.343”	0.234”

Pin Size(A4)	Key pin length	Top pin length
0	0.110”	N/A
1	0.131”	0.021”
2	0.152”	0.042”
3	0.173”	0.063”
4	0.194”	0.084”
5	0.215”	0.105”
6	N/A	0.126”
7		0.147”
8		0.168”
9		0.189”
10		0.210”
11	0.340”	0.231”

Key Decoding:

Pin size	A2	A3	A4
0	0.318”	0.318”	0.318”
1	0.3055”	0.300”	0.297”
2	0.293”	0.282”	0.276”
3	0.2805”	0.264”	0.255”
4	0.268”	0.246”	0.234”
5	0.2555”	0.228”	0.213”
6	0.243”	0.210”	N/A
7	0.2305”	N/A	
8	0.218”		
9	0.2055”		

Corbin Emhart High-Security and Z and DH Class (System 70)
Pin diameter: ?
Core diameter: 0.55”
MACS: Variable; see notes
Keys are read bow to tip

High-Security Pins

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
2	0.242”	0.097”	0.193” (1)	0.305”
3	0.270”	0.125”		0.277”
4	0.298”	0.153”		0.249”
5	0.326”	N/A	0.158” (2)	0.221”
6	0.354”			0.193”

The MACS is 3 when the cuts are different and 4 when they are the same
Master pin angles are 1 for Left, 2 for Right, 3 for Same

Conventional Pins

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
1	N/A	0.028”	N/A	N/A
2	0.231”	0.056”	0.198”	0.305”
3	0.260”	0.084”	0.171”	0.277”
4	0.288”	0.112”	0.142”	0.249”
5	0.316”	N/A	0.114”	0.221”
6	0.344”		0.087”	0.193”

Top pin length is 0.171” for chamber 6 of Brink and Blockout cylinders

Corbin-Russwin Access 3 (AP)

Pin diameter: ?

Core diameter: 0.5”

MACS: 4

Keys are read bow to tip

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
1	0.231”	0.030”	0.030”	0.271”
2	0.261”	0.060”	0.060”	0.241”
3	0.291”	0.090”	0.090”	0.211”
4	0.321”	0.120”	0.120”	0.181”
5	0.351”	0.150”	0.150”	0.151”
6	0.381”	N/A	0.180”	0.121”
7	N/A		0.210”	N/A
8			0.240”	
9			0.270”	

Bump-Resistant Top Pins

Pin size	Pin length
1	N/A
2	
3	
4	0.120”
5	0.150”
6	0.180”
7	0.210”
8	0.240”
9	0.270”

Continued on the next page

Corbin-Russwin Access 3 (AS & AHS)
Pin diameter: ?
Core diameter: 0.5”
MACS: 4
Keys are read bow to tip
See notes

<table>
<tr><th>Pin size</th><th>Key pin length</th><th>Master pin length</th><th>Top pin length</th><th>Cut depth</th></tr>
<tr><td>1</td><td>0.231”</td><td>0.030”</td><td>0.030”</td><td>0.271”</td></tr>
<tr><td>2</td><td>0.261”</td><td>0.060”</td><td>0.060”</td><td>0.241”</td></tr>
<tr><td>3</td><td>0.291”</td><td>0.090”</td><td>0.090”</td><td>0.211”</td></tr>
<tr><td>4</td><td>0.321”</td><td>0.120”</td><td>0.120”</td><td>0.181”</td></tr>
<tr><td>5</td><td>0.351”</td><td>0.150”</td><td>0.150”</td><td>0.151”</td></tr>
<tr><td>6</td><td>0.381”</td><td rowspan="4">N/A</td><td>0.180”</td><td>0.121”</td></tr>
<tr><td>7</td><td rowspan="3">N/A</td><td>0.210”</td><td rowspan="3">N/A</td></tr>
<tr><td>8</td><td>0.240”</td></tr>
<tr><td>9</td><td>0.270”</td></tr>
</table>

Cuts are angled between ±20°

Corbin-Russwin Pyramid
Pin diameter: 0.112”
Core diameter: 0.466”
MACS: 7
Keys are read bow to tip
See notes

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
0	0.139”	N/A	0.189”	0.327”
1	0.155”		0.173”	0.311”
2	0.171”	0.031”	0.157”	0.295”
3	0.187”	0.047”	0.141”	0.280”
4	0.202”	0.063”	0.126”	0.264”
5	0.218”	0.078”	0.110”	0.248”
6	0.234”	0.094”	0.094”	0.232”
7	0.250”	0.110”	0.078”	0.217”
8	0.265”	0.126”	0.063”	0.201”
9	0.281”	0.141”	0.047”	0.185”

Conventional cores: Use Top pin A with plug totals 5-9. Use Top pin C with plug totals 0-4
IC Non-control chambers: Use Top pin B with plug totals 5-9. Use Top pin C with plug totals 0-4

Pin size	Pin length
A	0.141”
B	0.204”
C	0.236”

Corbin-Russwin Z and DH Class (System 70)
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 4
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
1	0.160”	0.203”	0.028”	0.192”	0.339”
2	0.189”	0.231”	0.056”	0.163”	0.311”
3	0.217”	0.260”	0.084”	0.135”	0.283”
4	0.245”	0.288”	0.112”	0.107”	0.255”
5	0.273”	0.316”	0.140”	0.080”	0.227”
6	0.301”	0.344”	N/A		0.199”
%	N/A	N/A		N/A	0.213”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores
The 5 ½ or % cut is used on construction master keys

Corbin X Class (Pre-System 70)
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 8
Keys are read tip to bow

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
1	0.171”	0.213”	N/A	0.192”	0.333”
2	0.186”	0.228”	0.028”	0.177”	0.319”
3	0.198”	0.241”	0.042”	0.163”	0.305”
4	0.213”	0.256”	0.056”	0.149”	0.291”
5	0.228”	0.269”	0.070”	0.135”	0.277”
6	0.241”	0.283”	0.084”	0.120”	0.263”
7	0.256”	0.297”	0.098”	0.107”	0.249”
8	0.269”	0.311”	0.112”	0.093”	0.235”
9	0.283”	0.326”	0.126”	0.080”	0.221”
10	0.297”	0.340”	N/A	0.066”	0.207”
11	N/A	N/A		N/A	0.193”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores
The 11 cut is used on some construction master keys

Corbin X Class (System 70)
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 4
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
1	0.171”	0.203”	0.028”	0.192”	0.339”
2	0.198”	0.231”	0.056”	0.163”	0.311”
3	0.228”	0.260”	0.084”	0.135”	0.283”
4	0.256”	0.288”	0.112”	0.107”	0.255”
5	0.283”	0.316”	0.140”	0.080”	0.227”
6	0.311”	0.344”	N/A		0.199”
%	N/A	N/A		N/A	0.207”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores
The 5 ½ or % cut is used on construction master keys

Corbin Z Class (Pre-System 70)
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 8
Keys are read tip to bow

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
1	0.160”	0.203”	N/A	0.192”	0.339”
2	0.175”	0.217”	0.028”	0.177”	0.325”
3	0.189”	0.231”	0.042”	0.163”	0.311”
4	0.203”	0.245”	0.056”	0.149”	0.297”
5	0.217”	0.260”	0.070”	0.135”	0.283”
6	0.231”	0.273”	0.084”	0.120”	0.269”
7	0.245”	0.288”	0.098”	0.107”	0.255”
8	0.260”	0.301”	0.112”	0.093”	0.241”
9	0.273”	0.316”	0.126”	0.080”	0.227”
10	0.288”	0.330”	N/A	0.066”	0.213”
11	N/A	N/A		N/A	0.199”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores
The 11 cut is used on some construction master keys

Kwikset
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: 4
Tolerance: ±0.003”
Keys are read bow to tip

Pin size	Key pin length	Master pin length	Cut depth
1	0.172”	0.023”	0.329”
2	0.195”	0.046”	0.306”
3	0.218”	0.069”	0.283”
4	0.241”	0.092”	0.260”
5	0.264”	0.115”	0.237”
6	0.287”	0.138”	0.214”
Regular	N/A	0.180”	N/A
Constant	N/A	0.160”	N/A

Master Lock
Pin diameter: 0.094”
Core diameter: 0.4”
MACS: 5
Keys are read bow to tip

Pin Size	Pin length	Master pin length	Top pin length	Cut depth (pre-2001)	Cut depth (post-2001)
0	0.127”		Left	Center	Right
1	0.142”	Extra Shallow		N/A	7, 0.072”
2	0.1575”	Shallow		3, 0.060”	5, 0.048”
3	0.173”	Deep		4, 0.036”	6, 0.024”
4	0.1885”	0.062”		0.2090”	0.2225”
5	0.204”	0.0775”		0.1935”	0.2070”
6	0.2195”	0.093”		0.1780”	0.1915”
7	0.235”	0.1085”		0.1625”	0.1760”

Medeco Classic
Pin diameter: 0.135”
Core diameter: 0.5”
MACS: 4
Keys are read bow to tip

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
1	0.245”	0.030”	0.270”	0.258”
2	0.275”	0.060”	0.240”	0.228”
3	0.305”	0.090”	0.210”	0.198”
4	0.335”	0.120”	0.180”	0.168”
5	0.365”	0.150”	0.150”	0.138”
6	0.395”	N/A	0.120”	0.108”

The total stack length should be 0.515”
Top pins 1-4 can be mushroom pins.

Medeco Biaxial

Pin diameter: 0.135”

Core diameter: 0.5”

MACS: Variable; see table

Keys are read bow to tip

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
1	0.239”	0.025”	0.270”	0.264”
2	0.264”	0.050”	0.240”	0.239”
3	0.289”	0.075”	0.210”	0.214”
4	0.314”	0.100”	0.210”	0.189”
5	0.339”	0.125”	0.180”	0.164”
6	0.364”	N/A	0.150”	0.139”

The total stack length must be between 0.499” and 0.524”

Angles:

Fore(Closer to the bow)	**Classic**	**Aft(Closer to the tip)**
K	L	M
B	C	D
Q	R	S

MACS:

	Tip side						
Bow side		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

Medeco M3
Pin diameter: 0.135”
Core diameter: 0.5”
MACS: Variable; see table for Medeco Biaxial
Keys are read bow to tip

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
1	0.239”	0.025”	0.270”	0.272”
2	0.264”	0.050”	0.240”	0.247”
3	0.289”	0.075”	0.210”	0.222”
4	0.314”	0.100”	0.210”	0.197”
5	0.339”	0.125”	0.180”	0.172”
6	0.364”	N/A	0.150”	0.147”

Mul-T-Lock Classic and Interactive
Pin diameter: ?
Core diameter: 0.5”
MACS: Inner pins can only be up to one cut different from the outer pin, there is no other MACS
Keys are read bow to tip

Pin size Inner/Outer	Inner pin length	Outer pin length	Master pin internal	Master pin external	Interactive element	Interactive length
0/Z	0.187”	0.183”	N/A	N/A	G	A-0
1/A	0.2066”	0.2047”	0.0196”	0.0196”	B	Z-1
2/B	0.2263”	0.2224”	0.0393”	0.0393”	S	Z-0
3/C	0.246”	0.2421”	0.059”	0.059”		
4/D	0.2657”	0.2618”	0.0787”	N/A		
5	0.2854”	N/A	N/A	N/A		

Russwin 752 Class
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 5
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
0	0.186”	0.231”	N/A	0.184”	0.310”
1	0.208”	0.251”		0.163”	0.290”
2	0.228”	0.269”	0.040”	0.142”	0.270”
3	0.248”	0.291”	0.060”	0.122”	0.250”
4	0.267”	0.311”	0.080”	0.103”	0.230”
5	0.288”	0.330”	0.100”	0.082”	0.210”
6	0.307”	0.349”	0.120”	0.063”	0.190”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores

Russwin 852 Class
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 5
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
B	0.171”	0.217”	N/A	0.202”	0.325”
0	0.193”	0.234”		0.184”	0.305”
1	0.213”	0.256”		0.163”	0.285”
2	0.231”	0.276”	0.040”	0.142”	0.265”
3	0.251”	0.294”	0.060”	0.122”	0.245”
4	0.273”	0.316”	0.080”	0.103”	0.225”
5	0.291”	0.334”	0.100”	0.082”	0.205”
6	0.311”	0.354”	0.120”	0.063”	0.185”
7	N/A	N/A	0.140”	N//A	N/A

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores

Russwin A Class
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 5
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
0	0.193”	0.234”	N/A	0.184”	0.305”
1	0.213”	0.256”		0.163”	0.285”
2	0.231”	0.276”	0.040”	0.142”	0.265”
3	0.251”	0.294”	0.060”	0.122”	0.245”
4	0.273”	0.316”	0.080”	0.103”	0.225”
5	0.291”	0.334”	0.100”	0.082”	0.205”
6	0.311”	0.354”	0.120”	0.063”	0.185”
7	N/A	N/A	0.140”	N//A	N/A

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores

Russwin Small Pin (Rim Cylinders)
Pin diameter: ?
Core diameter: 0.390”
MACS: 5
Keys are read bow to tip

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
0	0.125”	N/A	0.070”	0.265”
1	0.145”		0.198”	0.245”
2	0.165”	0.040”	0.184”	0.225”
3	0.185”	0.060”	0.170”	0.205”
4	0.205”	0.080”	0.156”	0.185”
5	0.225”	0.100”	0.142”	0.165”
6	0.245”	0.120”	0.126”	0.145”
7	N/A	N/A	N/A	0.125”

Russwin 981 Class
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 7
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
B	0.160”	0.203”	N/A	0.192”	0.338”
0	0.175”	0.217”		0.177”	0.323”
1	0.189”	0.231”		0.163”	0.308”
2	0.203”	0.248”	0.030”	0.149”	0.293”
3	0.220”	0.263”	0.045”	0.133”	0.278”
4	0.234”	0.276”	0.060”	0.118”	0.263”
5	0.248”	0.291”	0.075”	0.103”	0.248”
6	0.263”	0.307”	0.090”	0.087”	0.233”
7	0.279”	0.322”	0.105”	0.072”	0.218”
8	0.294”	0.337”	0.120”	0.058”	0.203”
9	N/A	N/A	0.135”	N/A	0.188”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores

Russwin DH Class (Pre-System 70)
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 7
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
0	0.160”	0.203”	N/A	0.192”	0.341”
1	0.175”	0.217”		0.177”	0.326”
2	0.189”	0.231”	0.030”	0.163”	0.311”
3	0.203”	0.248”	0.045”	0.149”	0.296”
4	0.220”	0.263”	0.060”	0.133”	0.281”
5	0.234”	0.276”	0.075”	0.118”	0.266”
6	0.248”	0.291”	0.090”	0.103”	0.251”
7	0.263”	0.307”	0.105”	0.087”	0.236”
8	0.279”	0.322”	0.120”	0.072”	0.221”
9	0.294”	0.337”	0.135”	0.058”	0.206”
10	N/A	N/A	N/A	N/A	0.191”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores
The 10 cut is used on some construction master keys

Russwin N Class (Pre-System 70)
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 7
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
0	0.171”	0.213”	N/A	0.192”	0.328”
1	0.186”	0.228”		0.177”	0.313”
2	0.201”	0.245”	0.030”	0.163”	0.298”
3	0.217”	0.260”	0.045”	0.149”	0.283”
4	0.231”	0.273”	0.060”	0.133”	0.268”
5	0.245”	0.288”	0.075”	0.118”	0.253”
6	0.260”	0.305”	0.090”	0.103”	0.238”
7	0.276”	0.320”	0.105”	0.087”	0.223”
8	0.291”	0.334”	0.120”	0.072”	0.203”
9	0.307”	0.349”	0.135”	0.058”	0.198”
10	N/A	N/A	N/A	N/A	0.178”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores
The 10 cut is used on some construction master keys

Russwin N Class (System 70)
Pin diameter: ?
Core diameter: 0.5” or 0.55”
MACS: 4
Keys are read bow to tip

Pin size	Key pin length 0.5”	Key pin length 0.55”	Master pin length	IC Top pin length	Cut depth
1	0.165”	0.208”	0.028”	0.192”	0.334”
2	0.193”	0.236”	0.056”	0.163”	0.306”
3	0.220”	0.263”	0.084”	0.135”	0.278”
4	0.248”	0.291”	0.112”	0.107”	0.250”
5	0.276”	0.320”	0.140”	0.080”	0.222”
6	0.305”	0.349”	N/A		0.194”
5 ½	N/A	N/A		N/A	0.208”

Standard top pin length is 0.171”
Use 0.247” top pin for non-control chambers
The IC Top pins only apply to the 0.5” cores
The 5 ½ cut is used on construction master keys

Sargent (0.020” variation)
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: 7 or 9 depending on cutting machine
Keys are read bow to tip
A pin size followed by a * means only used in the 6300 series

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
1	0.170”	N/A	0.200”	0.330”
2	0.190”	0.040”		0.310”
3	0.210”	0.060”		0.290”
4	0.230”	0.080”		0.270”
5	0.250”	0.100”		0.250”
6	0.270”	0.120”		0.230”
7	0.290”	0.140”		0.210”
8	0.310”	0.160”		0.190”
9	0.330”	0.180”		0.170”
10	0.350”	0.200”		0.150”
11*	N/A	0.220”	N/A	N/A
12*		0.240”		
13*		0.260”		
14*		0.280”		

Sargent (Signature Series)
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: 7
Keys are read bow to tip

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
1	0.170”	N/A	N/A	0.330”
2	0.190”	0.040”	0.040”	0.310”
3	0.210”	0.060”	0.060”	0.290”
4	0.230”	0.080”	0.080”	0.270”
5	0.250”	0.100”	0.100”	0.250”
6	0.270”	0.120”	0.120”	0.230”
7	0.290”	0.140”	0.140”	0.210”
8	0.310”	0.160”	0.160”	0.190”
9	0.330”	0.180”	0.180”	0.170”
10	0.350”	0.200”	0.200”	0.150”
11	N/A	0.220”	0.220”	N/A
12		0.240”	0.240”	
13		0.260”	0.260”	
14		0.280”	0.280”	

Sargent Degree (DG1)
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: 4
Keys are read bow to tip
There are a number of notes below

<table>
<tr><th>Pin size</th><th>Key pin length</th><th>Master pin length</th><th>Top pin length</th><th>Bump resistant top pin length</th><th>LFIC top pin length</th><th>Cut depth</th></tr>
<tr><td>1</td><td>0.231”</td><td>0.030”</td><td>0.030”</td><td rowspan="3">N/A</td><td>0.030”</td><td>0.271”</td></tr>
<tr><td>2</td><td>0.261”</td><td>0.060”</td><td>0.060”</td><td>0.060”</td><td>0.241”</td></tr>
<tr><td>3</td><td>0.291”</td><td>0.090”</td><td>0.090”</td><td>0.090”</td><td>0.211”</td></tr>
<tr><td>4</td><td>0.321”</td><td>0.120”</td><td>0.120”</td><td>0.120”</td><td>0.120”</td><td>0.181”</td></tr>
<tr><td>5</td><td>0.351”</td><td>0.150”</td><td>0.150”</td><td>0.150”</td><td>0.150”</td><td>0.151”</td></tr>
<tr><td>6</td><td>0.381”</td><td rowspan="5">N/A</td><td>0.180”</td><td>0.180”</td><td>N/A</td><td>0.121”</td></tr>
<tr><td>7</td><td rowspan="5">N/A</td><td>0.210”</td><td>0.210”</td><td>0.210”</td><td rowspan="5">N/A</td></tr>
<tr><td>8</td><td>0.240”</td><td>0.240”</td><td>0.240”</td></tr>
<tr><td>9</td><td>0.270”</td><td>0.270”</td><td>0.270”</td></tr>
<tr><td>10</td><td rowspan="2">N/A</td><td rowspan="2">N/A</td><td>0.300”</td></tr>
<tr><td>11</td><td>0.330”</td></tr>
</table>

Notes:
Plug totals are constant. For fixed cores and non-control chambers in LFICs, the height is 10, in LFIC control chambers, it is 13.
The 50-DG1 cylinder uses a 7 pin key, with pin 7 always being a 5 cut with a #8 driver

Sargent Degree (DG2 and DG3)
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: 4
Keys are read bow to tip
There are a number of notes below

<table>
<tr><th>Pin size</th><th>Key pin length</th><th>Master pin length</th><th>Top pin length</th><th>LFIC top pin length</th><th>Cut depth</th></tr>
<tr><td>1</td><td>0.231”</td><td>0.030”</td><td>0.030”</td><td>0.030”</td><td>0.271”</td></tr>
<tr><td>2</td><td>0.261”</td><td>0.060”</td><td>0.060”</td><td>0.060”</td><td>0.241”</td></tr>
<tr><td>3</td><td>0.291”</td><td>0.090”</td><td>0.090”</td><td>0.090”</td><td>0.211”</td></tr>
<tr><td>4</td><td>0.321”</td><td>0.120”</td><td>0.120”</td><td>0.120”</td><td>0.181”</td></tr>
<tr><td>5</td><td>0.351”</td><td>0.150”</td><td>0.150”</td><td>0.150”</td><td>0.151”</td></tr>
<tr><td>6</td><td>0.381”</td><td rowspan="6">N/A</td><td>0.180”</td><td>N/A</td><td>0.121”</td></tr>
<tr><td>7</td><td rowspan="5">N/A</td><td>0.210”</td><td>0.210”</td><td rowspan="5">N/A</td></tr>
<tr><td>8</td><td>0.240”</td><td>0.240”</td></tr>
<tr><td>9</td><td>0.270”</td><td>0.270”</td></tr>
<tr><td>10</td><td rowspan="2">N/A</td><td>0.300”</td></tr>
<tr><td>11</td><td>0.330”</td></tr>
</table>

Notes:
Plug totals are constant. For fixed cores and non-control chambers in LFICs, the height is 10, in LFIC control chambers, it is 13.
The DG2 and DG3 use angled pins in chambers 1-5, and DG1 pins in chamber 6

Schlage
Pin Diameter: 0.115”
Core diameter: 0.5”
MACS: 7
Tolerance: -0.002”
Keys are read bow to tip

Pin size	Key pin length	Master pin length	Cut depth
0	0.165”	N/A	0.335”
1	0.180”		0.320”
2	0.195”	0.030”	0.305”
3	0.210”	0.045”	0.290”
4	0.225”	0.060”	0.275”
5	0.240”	0.075”	0.260”
6	0.255”	0.090”	0.245”
7	0.270”	0.105”	0.230”
8	0.285”	0.120”	0.215”
9	0.300”	0.135”	0.200”

Schlage locks may use compensated driver pins.

Pin size	Pin length	Stack height
1	0.235”	0,1,2,3
2	0.200”	4,5,6
3	0.165”	7,8,9

Schlage SL
Pin diameter: ?
Core diameter: ?
MACS: 8
Keys are read tip to bow
Pins are all the same length

Pin size	Cut depth
0	0.3187”
1	0.3062”
2	0.2937”
3	0.2812”
4	0.2687”
5	0.2562”
6	0.2437’
7	0.2312”
8	0.2187”
9	0.2062”

Finger pins

	Left	Center	Right
Extra Shallow	N/A	N/A	7, 0.072”
Shallow	1, 0.048”	3, 0.060”	5, 0.048”
Deep	2, 0.024”	4, 0.036”	6, 0.024”

Yale (0.019”)
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: Variable; see table
Keys are read bow to tip

Pin Size	Key pin length	Master pin length	Top pin length	Cut depth
0	0.182”	N/A	0.230”	0.320”
1	0.201”			0.301”
2	0.220”	0.038”		0.282”
3	0.239”	0.057”	0.190”	0.263”
4	0.258”	0.076”		0.244”
5	0.277”	0.095”		0.225”
6	0.296”	0.114”	0.152”	0.206”
7	0.315”	0.133”		0.187”
8	0.334”	0.152”		0.168”
9	0.353”	N/A	0.114”	0.149”

MACS:

MACS	Pin tip angle
4	110°
5	95°
6	86°

Yale (0.025”)
Pin diameter: 0.115”
Core diameter: 0.5”
MACS: Variable, see table
Keys are read bow to tip

Pin Size	Key pin length	Master pin length	Top pin length	Cut depth
0	0.182”	N/A	0.230”	0.320”
1	0.207”			0.295”
2	0.232”	0.050”		0.270”
3	0.258”	0.075”	0.190”	0.245”
4	0.282”	0.100”		0.220”
5	0.307”	0.125”		0.195”
6	0.334”	0.152”	0.152”	0.170”
7	0.357”	0.175”		0.145”

MACS:

MACS	Pin tip angle
4	110°
5	95°
6	86°

Yale KeyMark
Pin diameter: ?
Core diameter: 0.434” for SFIC, Corbin-Russwin/Sargent LFIC and cam locks, 0.511” for Schlage/Yale LFIC and conventional cylinders
Pin stack total is 23 for SFIC and 19 for all others
MACS: 9
Keys are read tip to bow
Pin size followed by a * means the key pin can be spooled, a pin size followed by ** means the top pin can be spooled, and a pin size followed by *** means both can be spooled

Pin size	Key pin length	Master, Build-up and Top pin lengths	Cut depth
0	0.110”	N/A	0.1385”
1	0.122”		0.1260”
2	0.135”	0.025”	0.1135”
3	0.147”	0.037”	0.1010”
4	0.160”	0.050”	0.0885”
5	0.172”	0.062”	0.0760”
6**	0.185”	0.075”	0.0635”
7*	0.197”	0.087”	0.0510”
8***	0.210”	0.100”	0.0385”
9*	0.222”	0.112”	0.0260”
10**	N/A	0.125”	N/A
11		0.137”	
12		0.150”	
13		0.162”	
14		0.175”	
15		0.187”	
16		0.200”	
17		0.212”	
18		0.225”	
19		0.237”	

SFIC Pinning sheet:

		1	2	3	4	5	6	7
A	1. Write TMK bitting							
	2. Write next lower level MK bitting							
	3. Write next lower level MK bitting							
	4. Write next lower level MK bitting							
	5. Write CK bitting							
	6. Select Bottom Pin							
	7. Select Master Pin							
	8. Select Master Pin							
	9. Select Master Pin							
	Record Bottom and Master Pins in D							
B	1. Write CONTROL key bitting							
	2. Write the second CONTROL key bitting							
	3. Add the pinning constant to B1, record in B5							
	4. Add the pinning constant to B2, record in B6							
	5. This is the CONTROL NUMBER							
	6. This is the second CONTROL NUMBER							
	7. Add A6 through A9							
	8. Subtract B7 from the smaller control number							
	9. Write the difference in control numbers							
	10. Write the sum of B7 through B9							
	Record B8 in D3 and B9 in D2							
C	1. Total allowable pins							
	2. Write B10							
	3. Subtract C2 from C1							
	Record C3 in D1							
D	**Pinning**							
	1. Top Pin							
	2. Master Pin							
	3. Build-Up Pin							
	4. Master Pin							
	5. Master Pin							
	6. Master Pin							
	7. Bottom Pin							
	The sum of D1 through D7 should equal C1							

SFIC Decoding sheet:

	1	2	3	4	5	6	7
1. Top pin							
2. Master pin							
3. Build-Up pin							
4. Master pin							
5. Master pin							
6. Bottom pin							
The sum of rows 1 through 6 should be the pin total							
Subtract the top pins from the decoding constant							
Top pin							
CONTROL KEY 1 bitting							
Add 2 and 3							
Subtract from the decoding constant							
CONTROL KEY 2 bitting							

Build-up Pins Emhart, Z, DH (System 70)

Pin size	Pin length
-4	0.030”
-3	0.058”
-2	0.087”
-1	0.114”
0	0.142”
1	0.171”
2	0.198”
3	0.226”
4	0.253”

Build-up Pins (LFIC) for Access 3 (AP) and (AS & AHS)

Pin size	Pin length
1	0.030”
2	0.060”
3	0.090”
4	0.120”
5	0.150”
6	0.180”
7	0.210”
8	0.240”
9	0.270”
10	0.300”
11	0.330”

Access 3 cylinders have constant plug totals
Fixed cores and non-control chambers in LFICs have a height of 10
LFIC control chambers have a height of 13

Build-up Pins for Corbin-Russwin Pyramid

Pin size	Pin length
-8	0.031”
-7	0.047”
-6	0.063”
-5	0.078”
-4	0.094”
-3	0.110”
-2	0.126”
-1	0.141”
0	0.157”
1	0.173”
2	0.189”
3	0.204”
4	0.220”
5	0.236”
6	0.252”
7	0.267”
8	0.283”
9	0.299”

Build-up Pins for Corbin-Russwin Z and DH Class (System 70), Corbin X Class (System 70) and Russwin N Class (System 70)

Pin size	Pin length 0.5”	Pin length 0.55”
-4	0.051”	0.030”
-3	0.080”	0.058”
-2	0.107”	0.087”
-1	0.135”	0.114”
0	0.163”	0.142”
1	0.192”	0.171”
2	0.218”	0.198”
3	0.247”	0.226”
4	0.275”	0.253”
5	0.303”	0.282”

Build-up pins for Corbin X and Z Class (Pre-System 70)

Pin size	Pin length 0.5”	Pin length 0.55”
-9	0.037”	N/A
-8	0.051”	0.030”
-7	0.066”	0.045”
-6	0.080”	0.058”
-5	0.093”	0.072”
-4	0.107”	0.087”
-3	0.120”	0.100”
-2	0.135”	0.114”
-1	0.149”	0.128”
0	0.163”	0.142”
1	0.177”	0.156”
2	0.192”	0.171”
3	0.205”	0.184”
4	0.218”	0.198”
5	0.232”	0.212”
6	0.247”	0.226”
7	0.261”	0.241”
8	0.275”	0.253”
9	0.289”	0.268”

Build-up Pins for Russwin 752, 852 and A Class

Pin size	Pin length 0.5”	Pin length 0.55”
-6	0.042”	N/A
-5	0.063”	0.042”
-4	0.082”	0.063”
-3	0.103”	0.082”
-2	0.122”	0.103”
-1	0.142”	0.122”
0	0.163”	0.142”
1	0.184”	0.163”
2	0.202”	0.184”
3	0.222”	0.202”
4	0.241”	0.222”
5	0.261”	0.241”
6	0.282”	0.261”

Build-up Pins for Russwin 981, DH and N Class (Pre-System 70)

Pin size	Pin length 0.5”	Pin length 0.55”
-9	0.028”	N/A
-8	0.042”	
-7	0.058”	0.037”
-6	0.072”	0.051”
-5	0.067”	0.066”
-4	0.103”	0.082”
-3	0.118”	0.098”
-2	0.133”	0.112”
-1	0.149”	0.126”
0	0.163”	0.142”
1	0.177”	0.156”
2	0.192”	0.171”
3	0.208”	0.187”
4	0.222”	0.202”
5	0.238”	0.218”
6	0.253”	0.232”
7	0.268”	0.247”
8	0.282”	0.261”
9	0.298”	0.277”