

Lock Key and Pin Specification Reference Sheet

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, and some SFIC pinning worksheets included in this document.

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.

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 (System 70) and Corbin-Russwin Z system

Pin diameter: ?

Core diameter: 0.55"

MACS: 3 if adjacent cuts are different angles, 4 if they are the same

Keys have angled cuts, L or R

Keys are read bow to tip

There are a number of notes below

High-Security Pins

Pin size	Key pin length	Master pin length	Top pin length	Cut depth
2	0.242"	0.097"	0.193"	0.305"
3	0.270"	0.125"		0.277"
4	0.298"	0.153"		0.249"
5	0.326"	N/A	0.158"	0.221"
5 ½ / %	N/A?			N/A?
6	0.354"			0.193"

Notes:

The top pins are coded 1 for 0.193" and 2 for 0.158"

The angled cuts are $\pm 20^\circ$

The 5 ½ cut is only used for construction keying

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
1	N/A	0.028"	N/A
2	0.231"	0.056"	0.198"
3	0.260"	0.084"	0.171"
4	0.288"	0.112"	0.142"
5	0.316"	N/A	0.114"
6	0.344"		0.087"

The #3 top pin is only used in chamber 6 of Brink and Blockout cylinders

Continued on next page

Build-up Pins

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"

Corbin-Russwin Access 3 (AP)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 4

Keys are read bow to tip

There are a number of notes below

Pin size	Key pin length	Master pin length	Top pin length	Bump resistant top pin length	Build-up pins (LFIC)	Cut depth
1	0.231"	0.030"	0.030"	N/A	0.030"	0.271"
2	0.261"	0.060"	0.060"		0.060"	0.241"
3	0.291"	0.090"	0.090"		0.090"	0.211"
4	0.321"	0.120"	0.120"	0.120"	0.120"	0.181"
5	0.351"	0.150"	0.150"	0.150"	0.150"	0.151"
6	0.381"	N/A	0.180"	0.180"	N/A	0.121"
7	N/A		0.210"	0.210"	0.210"	N/A
8			0.240"	0.240"	0.240"	
9			0.270"	0.270"	0.270"	
10			N/A	N/A	0.300"	
11					0.330"	

Plug totals are constant. For fixed cores and non-control chambers in LFICs, the height is 10, in LFIC control chambers, it is 13.

Corbin-Russwin Access 3 (AS and AHS)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 4

Keys are read bow to tip

There are a number of notes below

Pin size	Key pin length	Master pin length	Top pin length	Build-up pins (LFIC)	Cut depth
1	0.231"	0.030"	0.030"	0.030"	0.271"
2	0.261"	0.060"	0.060"	0.060"	0.241"
3	0.291"	0.090"	0.090"	0.090"	0.211"
4	0.321"	0.120"	0.120"	0.120"	0.181"
5	0.351"	0.150"	0.150"	0.150"	0.151"
6	0.381"	N/A	0.180"	N/A	0.121"
7	N/A		0.210"	0.210"	N/A
8			0.240"	0.240"	
9			0.270"	0.270"	
10			N/A	0.300"	
11				0.330"	

Plug totals are constant. For fixed cores and non-control chambers in LFICs, the height is 10, in LFIC control chambers, it is 13.

Cuts are angled L, C, or R

Corbin-Russwin Pyramid

Pin diameter: 0.112"

Core diameter: 0.466"

MACS: 7

Keys are read bow to tip

See notes below

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"

Continued on next page

Build-up Pins

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"

Conventional cylinders: Use Top pin A with stack heights 5-9, and top pin C with stack heights 0-4.

IC Non-control chambers: Use Top pin B with stack heights 5-9, and top pin C with stack heights 0-4.

Top pins

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

Corbin-Russwin Z and DH (System 70)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 4

Keys are read bow to tip

0.5" Diameter

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
1	0.160"	0.028"	0.192"	0.339"
2	0.189"	0.056"	0.163"	0.311"
3	0.217"	0.084"	0.135"	0.283"
4	0.245"	0.112"	0.107"	0.255"
5	0.273"	0.140"	0.080"	0.227"
6	0.301"	N/A		0.199"

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Build-up Pins

Pin size	Pin length
-4	0.051"
-3	0.080"
-2	0.107"
-1	0.135"
0	0.163"
1	0.192"
2	0.218"
3	0.247"
4	0.275"
5	0.303"

Corbin-Russwin Z and DH (System 70)

Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 4

Keys are read bow to tip

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
1	0.203"	0.028"	0.339"
2	0.231"	0.056"	0.311"
3	0.260"	0.084"	0.283"
4	0.288"	0.112"	0.255"
5	0.316"	0.140"	0.227"
6	0.344"	N/A	0.199"

Standard top pin is 0.171"

Build-up Pins

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"
5	0.282"

Corbin X Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 8

Keys are read tip to bow

See notes below

0.5" Diameter

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

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Continued on next page

Build-up Pins

Pin size	Pin length
-9	0.037"
-8	0.051"
-7	0.066"
-6	0.080"
-5	0.093"
-4	0.107"
-3	0.120"
-2	0.135"
-1	0.149"
0	0.163"
1	0.177"
2	0.192"
3	0.205"
4	0.218"
5	0.232"
6	0.247"
7	0.261"
8	0.275"
9	0.289"

Corbin X Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 8

Keys are read tip to bow

See notes below

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
1	0.213"	N/A	0.333"
2	0.228"	0.028"	0.319"
3	0.241"	0.042"	0.305"
4	0.256"	0.056"	0.291"
5	0.269"	0.070"	0.277"
6	0.283"	0.084"	0.263"
7	0.297"	0.098"	0.249"
8	0.311"	0.112"	0.235"
9	0.326"	0.126"	0.221"
10	0.340"	N/A	0.207"

Standard top pin is 0.171"

Continued on the next page

Build-up Pins

Pin size	Pin length
-8	0.030"
-7	0.045"
-6	0.058"
-5	0.072"
-4	0.087"
-3	0.100"
-2	0.114"
-1	0.128"
0	0.142"
1	0.156"
2	0.171"
3	0.184"
4	0.196"
5	0.212"
6	0.226"
7	0.241"
8	0.253"
9	0.268"

Corbin X Class (System 70)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 4

Keys are read bow to tip

See notes below

0.5" Diameter

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
1	0.171"	0.028"	0.192"	0.333"
2	0.198"	0.056"	0.163"	0.305"
3	0.228"	0.084"	0.135"	0.277"
4	0.256"	0.112"	0.107"	0.249"
5	0.283"	0.140"	0.080"	0.221"
6	0.311"	N/A		0.193"

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Build-up Pins

Pin size	Pin length
-4	0.051"
-3	0.080"
-2	0.107"
-1	0.135"
0	0.163"
1	0.192"
2	0.218"
3	0.247"
4	0.275"
5	0.303"

Corbin-Russwin Z and DH (System 70)

Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 4

Keys are read bow to tip

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
1	0.213"	0.028"	0.333"
2	0.241"	0.056"	0.305"
3	0.269"	0.084"	0.277"
4	0.297"	0.112"	0.249"
5	0.326"	0.140"	0.221"
6	0.354"	N/A	0.193"

Standard top pin is 0.171"

Build-up Pins

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"
5	0.282"

Corbin Z Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 8

Keys are read tip to bow

See notes

0.5" Diameter

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
1	0.160"	N/A	0.192"	0.339"
2	0.175"	0.028"	0.177"	0.325"
3	0.189"	0.042"	0.163"	0.311"
4	0.203"	0.056"	0.149"	0.297"
5	0.217"	0.070"	0.135"	0.283"
6	0.231"	0.084"	0.12"	0.269"
7	0.245"	0.098"	0.107"	0.255"
8	0.260"	0.112"	0.093"	0.241"
9	0.273"	0.126"	0.080"	0.227"
10	0.288"	N/A	0.066"	0.213"

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Continued on the next page

Build-up Pins

Pin size	Pin length
-9	0.037"
-8	0.051"
-7	0.066"
-6	0.080"
-5	0.093"
-4	0.107"
-3	0.120"
-2	0.135"
-1	0.149"
0	0.163"
1	0.177"
2	0.192"
3	0.205"
4	0.218"
5	0.232"
6	0.247"
7	0.261"
8	0.275"
9	0.289"

Corbin Z Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 8

Keys are read tip to bow

See notes below

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
1	0.203"	N/A	0.333"
2	0.217"	0.028"	0.319"
3	0.231"	0.042"	0.305"
4	0.245"	0.056"	0.291"
5	0.260"	0.070"	0.277"
6	0.273"	0.084"	0.263"
7	0.288"	0.098"	0.249"
8	0.301"	0.112"	0.235"
9	0.316"	0.126"	0.221"
10	0.330"	N/A	0.207"

Standard top pin is 0.171"

Continued on the next page

Build-up Pins

Pin size	Pin length
-8	0.030"
-7	0.045"
-6	0.058"
-5	0.072"
-4	0.087"
-3	0.100"
-2	0.114"
-1	0.128"
0	0.142"
1	0.156"
2	0.171"
3	0.184"
4	0.196"
5	0.212"
6	0.226"
7	0.241"
8	0.253"
9	0.268"

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 for info
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: 0.115"
Core diameter: 0.5"
MACS: 5

Keys are read bow to tip

See notes

0.5" Diameter

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

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Build-up Pins

Pin Size	Pin length
-6	0.042"
-5	0.063"
-4	0.082"
-3	0.103"
-2	0.122"
-1	0.142"
0	0.163"
1	0.184"
2	0.202"
3	0.222"
4	0.241"
5	0.261"
6	0.282"

Russwin 752 Class
Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 5

Keys are read bow to tip

See notes

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
0	0.231"	N/A	0.310"
1	0.251"		0.290"
2	0.269"	0.040"	0.270"
3	0.291"	0.060"	0.250"
4	0.311"	0.080"	0.230"
5	0.330"	0.100"	0.210"
6	0.349"	0.120"	0.190"

Standard top pin is 0.171"

Build-up Pins

Pin Size	Pin length
-5	0.042"
-4	0.063"
-3	0.082"
-2	0.103"
-1	0.122"
0	0.142"
1	0.163"
2	0.184"
3	0.202"
4	0.222"
5	0.241"
6	0.261"

Russwin 852 Class
Pin diameter: 0.115"
Core diameter: 0.5"

MACS: 5

Keys are read bow to tip

See notes

0.5" Diameter

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

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Build-up Pins

Pin Size	Pin length
-6	0.042"
-5	0.063"
-4	0.082"
-3	0.103"
-2	0.122"
-1	0.142"
0	0.163"
1	0.184"
2	0.202"
3	0.222"
4	0.241"
5	0.261"
6	0.282"

Russwin 852 Class
Pin diameter: 0.115"
Core diameter: 0.55"
MACS: 5

Keys are read bow to tip

See notes

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
B	0.217"	N/A	0.325"
0	0.234"		0.305"
1	0.256"		0.285"
2	0.276"	0.040"	0.265"
3	0.294"	0.060"	0.245"
4	0.316"	0.080"	0.225"
5	0.334"	0.100"	0.205"
6	0.354"	0.120"	0.185"
7	N/A	0.140"	N/A

Standard top pin is 0.171"

Build-up Pins

Pin Size	Pin length
-5	0.042"
-4	0.063"
-3	0.082"
-2	0.103"
-1	0.122"
0	0.142"
1	0.163"
2	0.184"
3	0.202"
4	0.222"
5	0.241"
6	0.261"

Russwin A Class
Pin diameter: 0.115"
Core diameter: 0.5"

MACS: 5

Keys are read bow to tip

See notes

0.5" Diameter

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
0	0.177"	N/A	0.184"	0.315"
1	0.198"		0.163"	0.295"
2	0.217"	0.040"	0.142"	0.275"
3	0.236"	0.060"	0.122"	0.255"
4	0.256"	0.080"	0.103"	0.235"
5	0.276"	0.100"	0.082"	0.215"
6	0.297"	0.120"	0.063"	0.195"

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Build-up Pins

Pin Size	Pin length
-6	0.042"
-5	0.063"
-4	0.082"
-3	0.103"
-2	0.122"
-1	0.142"
0	0.163"
1	0.184"
2	0.202"
3	0.222"
4	0.241"
5	0.261"
6	0.282"

Russwin A Class
Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 5

Keys are read bow to tip

See notes

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
0	0.220"	N/A	0.315"
1	0.241"		0.295"
2	0.260"	0.040"	0.275"
3	0.279"	0.060"	0.255"
4	0.301"	0.080"	0.235"
5	0.320"	0.100"	0.215"
6	0.340"	0.120"	0.195"

Standard top pin is 0.171"

Build-up Pins

Pin Size	Pin length
-5	0.042"
-4	0.063"
-3	0.082"
-2	0.103"
-1	0.122"
0	0.142"
1	0.163"
2	0.184"
3	0.202"
4	0.222"
5	0.241"
6	0.261"

Russwin N Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.50"

MACS: 7

Keys are read bow to tip

See notes

0.5" Diameter

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
0	0.171"	N/A	0.192"	0.328"
1	0.186"		0.177"	0.313"
2	0.201"	0.030"	0.163"	0.298"
3	0.217"	0.045"	0.149"	0.283"
4	0.231"	0.060"	0.133"	0.268"
5	0.245"	0.075"	0.118"	0.253"
6	0.260"	0.090"	0.103"	0.238"
7	0.276"	0.105"	0.087"	0.223"
8	0.291"	0.120"	0.072"	0.208"
9	0.307"	0.135"	0.058"	0.193"

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Continued on the next page

Build-up Pins

Pin size	Pin length
-9	0.028"
-8	0.042"
-7	0.058"
-6	0.072"
-5	0.087"
-4	0.103"
-3	0.118"
-2	0.133"
-1	0.149"
0	0.163"
1	0.177"
2	0.192"
3	0.208"
4	0.222"
5	0.238"
6	0.253"
7	0.268"
8	0.282"
9	0.298"

Russwin N Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 7

Keys are read bow to tip

See notes

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
0	0.213"	N/A	0.328"
1	0.228"		0.313"
2	0.245"	0.030"	0.298"
3	0.260"	0.045"	0.283"
4	0.273"	0.060"	0.268"
5	0.288"	0.075"	0.253"
6	0.305"	0.090"	0.238"
7	0.320"	0.105"	0.223"
8	0.334"	0.120"	0.208"
9	0.349"	0.135"	0.193"

Standard top pin is 0.171"

Continued on the next page

Build-up Pins

Pin size	Pin length
-7	0.037"
-6	0.051"
-5	0.066"
-4	0.082"
-3	0.098"
-2	0.112"
-1	0.126"
0	0.142"
1	0.156"
2	0.171"
3	0.187"
4	0.202"
5	0.218"
6	0.232"
7	0.247"
8	0.261"
9	0.277"

Russwin N Class (System 70)

Pin diameter: 0.115"

Core diameter: 0.5"

MACS: 4

Keys are read bow to tip

0.5" Diameter

Pin size	Key pin length	Master pin length	IC Top pin length	Cut depth
1	0.165"	0.028"	0.192"	0.334"
2	0.193"	0.056"	0.163"	0.306"
3	0.220"	0.084"	0.135"	0.278"
4	0.248"	0.112"	0.107"	0.250"
5	0.276"	0.140"	0.080"	0.222"
6	0.305"	N/A		0.194"

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Build-up Pins

Pin size	Pin length
-4	0.051"
-3	0.080"
-2	0.107"
-1	0.135"
0	0.163"
1	0.192"
2	0.218"
3	0.247"
4	0.275"
5	0.303"

Russwin N Class (System 70)

Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 4

Keys are read bow to tip

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
1	0.208"	0.028"	0.334"
2	0.236"	0.056"	0.306"
3	0.263"	0.084"	0.278"
4	0.291"	0.112"	0.250"
5	0.320"	0.140"	0.222"
6	0.349"	N/A	0.194"

Standard top pin is 0.171"

Build-up Pins

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"
5	0.282"

Russwin Small Pin
Pin diameter: ?
Core diameter: 0.4"
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: 0.115"?
Core diameter: 0.5"

MACS: 7

See notes

0.5" Diameter

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

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Continued on the next page

Build-up Pins

Pin size	Pin length
-9	0.028"
-8	0.042"
-7	0.058"
-6	0.072"
-5	0.087"
-4	0.103"
-3	0.118"
-2	0.133"
-1	0.149"
0	0.163"
1	0.177"
2	0.192"
3	0.208"
4	0.222"
5	0.238"
6	0.253"
7	0.268"
8	0.282"
9	0.298"

Russwin 981 Class
Pin diameter: 0.115"?
Core diameter: 0.55"
MACS: 7

See notes

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
B	0.203"	N/A	0.338"
0	0.217"		0.323"
1	0.231"		0.308"
2	0.248"	0.030"	0.293"
3	0.263"	0.045"	0.278"
4	0.276"	0.060"	0.263"
5	0.291"	0.075"	0.248"
6	0.307"	0.090"	0.233"
7	0.322"	0.105"	0.218"
8	0.337"	0.120"	0.203"
9	N/A	0.135"	0.188"

Standard top pin is 0.171"
Continued on the next page

Build-up Pins

Pin size	Pin length
-7	0.037"
-6	0.051"
-5	0.066"
-4	0.082"
-3	0.098"
-2	0.112"
-1	0.126"
0	0.142"
1	0.156"
2	0.171"
3	0.187"
4	0.202"
5	0.218"
6	0.232"
7	0.247"
8	0.261"
9	0.277"

Russwin DH Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.50"

MACS: 7

Keys are read bow to tip

See notes

0.5" Diameter

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

Standard top pin is 0.171"

Use 0.247" top pin for non-control chambers

Continued on the next page

Build-up Pins

Pin size	Pin length
-9	0.028"
-8	0.042"
-7	0.058"
-6	0.072"
-5	0.087"
-4	0.103"
-3	0.118"
-2	0.133"
-1	0.149"
0	0.163"
1	0.177"
2	0.192"
3	0.208"
4	0.222"
5	0.238"
6	0.253"
7	0.268"
8	0.282"
9	0.298"

Russwin DH Class (Pre-System 70)

Pin diameter: 0.115"

Core diameter: 0.55"

MACS: 7

Keys are read bow to tip

See notes

0.55" Diameter

Pin size	Key pin length	Master pin length	Cut depth
0	0.203"	N/A	0.341"
1	0.217"		0.326"
2	0.231"	0.030"	0.311"
3	0.248"	0.045"	0.296"
4	0.263"	0.060"	0.281"
5	0.276"	0.075"	0.266"
6	0.291"	0.090"	0.251"
7	0.307"	0.105"	0.236"
8	0.322"	0.120"	0.221"
9	0.337"	0.135"	0.206"

Standard top pin is 0.171"

Continued on the next page

Build-up Pins

Pin size	Pin length
-7	0.037"
-6	0.051"
-5	0.066"
-4	0.082"
-3	0.098"
-2	0.112"
-1	0.126"
0	0.142"
1	0.156"
2	0.171"
3	0.187"
4	0.202"
5	0.218"
6	0.232"
7	0.247"
8	0.261"
9	0.277"

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

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

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

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

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"			0.270"
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							