

BEST A2

<http://www.lockreference.com>

MACS: 9
Increment: .0125"
Progression: Two Step
E.P.D. .428"
Included Angle: 90°
Root Cut: .054"

Key Origination	
Blackhawk	N/A
CodeMax	DSD #3
HPC Blitz	C3
HPC Punch	P3
ITL	54

Root Depths	
0	.318"
1	.3055"
2	.293"
3	.2805"
4	.268"
5	.2555"
6	.243"
7	.2305"
8	.218"
9	.2055"

Spacing	
1	.088"
2	.238"
3	.388"
4	.538"
5	.688"
6	.838"
7	.988"

T.F.C: .088"
B.C.C: .150"

Notes
1) Read and cut tip-to-bow.
2) 19A pins used for blockout cores.
3) 1B used in RARE master key systems incorporating existing keys.

	0A	1A	2A	3A	4A	5A	6A	7A	8A	9A
Bottom Pins	.110"	.1225"	.135"	.1475"	.160"	.1725"	.185"	.1975"	.210"	.2225"
	19A									
	.3475"									

	2B	3B	4B	5B	6B	7B	8B	9B	10B	11B
Master, Build-Up, & Top Pins	.025"	.0375"	.050"	.0625"	.075"	.0875"	.100"	.1125"	.125"	.1375"
	12B	13B	14B	15B	16B	17B	18B	19B		
	.150"	.1625"	.175"	.1875"	.200"	.2125"	.225"	.2375"		
	1B									
	.0125"									

Notes:

BEST A4

<http://www.lockreference.com>

MACS: 5
Increment: .021"
Progression: Single Step
E.P.D. .428"
Included Angle: 90°
Root Cut: .054"

Key Origination	
Blackhawk	N/A
CodeMax	DSD #303
HPC Blitz	CX11
HPC Punch	N/A
ITL	56

Root Depths	
0	.318"
1	.297"
2	.276"
3	.255"
4	.234"
5	.213"

Spacing	
1	.088"
2	.238"
3	.388"
4	.538"
5	.688"
6	.838"
7	.988"

Notes
1) Read and cut tip-to-bow.
2) 11E pins used for blockout cores.
3) MACS is technically 5 as there are no violations in system.

T.F.C: .088"

B.C.C: .150"

	0E	1E	2E	3E	4E	5E				
Bottom Pins	.110"	.131"	.152"	.173"	.194"	.215"				
	11E									
	.340"									

	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F
Master, Build-Up, & Top Pins	.021"	.042"	.063"	.084"	.105"	.126"	.147"	.168"	.189"	.210"
	11F									
	.231"									

Notes:

Corbin Russwin Z and DH Class (System 70)

<http://www.lockreference.com>

MACS: 4
Increment: .028"
Progression: Single Step
E.P.D. Varies
Included Angle: 90°
Root Cut: .053"

Key Origination	
Blackhawk	Card 439
CodeMax	Varies
HPC Blitz	CX6A
HPC Punch	N/A
ITL	122

Root Depths	
1	.339"
2	.311"
3	.283"
4	.255"
5	.227"
6	.199"

Spacing	
1	.250"
2	.406"
3	.562"
4	.718"
5	.874"
6	1.030"
7	1.186"

5 ½ or %	.213"
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T.F.C.: .250"

B.C.C.: .156"

Notes
1) Read and cut bow-to-tip.
2) .509" diameter plugs have EPD of .504", .552" are .546"
3) For CodeMax, use DSD #614 for IC, DSD #3614 for Non-IC.
4) Use .320" top pin for PL5000 padlock / to block master ring.
5) 5 ½ or % cut used on construction master keys.

.509" Diameter

	1	2	3	4	5	6				
Bottom Pins	.160"	.189"	.217"	.245"	.273"	.301"				
Master Pins	.028"	.056"	.084"	.112"	.140"					
IC Top Pins	.192"	.163"	.135"	.107"	.080"	.080"				

* Standard top pin length is .171".

** Use .247" top pin for non-control chambers.

	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Build-Up Pins	.051"	.080"	.107"	.135"	.163"	.192"	.218"	.247"	.275"	.303"

.552" Diameter

	1	2	3	4	5	6				
Bottom Pins	.203"	.231"	.260"	.288"	.316"	.344"				
Master Pins	.028"	.056"	.084"	.112"	.140"					

* Standard top pin length is .171".

	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Build-Up Pins	.030"	.058"	.087"	.114"	.142"	.171"	.198"	.226"	.253"	.282"

Notes:

Corbin X Class (Pre-System 70)

<http://www.lockreference.com>

MACS: 8
Increment: .014"
Progression: Two Step
E.P.D. Varies
Included Angle: 90°
Root Cut: .053"

Key Origination	
Blackhawk	Card 437
CodeMax	Varies
HPC Blitz	C13
HPC Punch	N/A
ITL	111

Root Depths	
1	.333"
2	.319"
3	.305"
4	.291"
5	.277"
6	.263"
7	.249"
8	.235"
9	.221"
0	.207"

Spacing	
1	.197"
2	.353"
3	.509"
4	.665"
5	.821"
6	.977"
7	1.133"

T.F.C.: .197"
B.C.C.: .156"

Notes
1) Read and cut tip-to-bow.
2) .509" diameter plugs have EPD of .504", .552" are .546"
3) For CodeMax, use DSD #16 for IC, DSD #3016 for Non-IC.
4) Use .320" top pin for PL5000 padlock / to block master ring.
5) 11 cut used on some construction master keys.

11*	.193"
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.509" Diameter

	1	2	3	4	5	6	7	8	9	0
Bottom Pins	.171"	.186"	.198"	.213"	.228"	.241"	.256"	.269"	.283"	.297"
Master Pins		.028"	.042"	.056"	.070"	.084"	.098"	.112"	.126"	
IC Top Pins	.192"	.177"	.163"	.149"	.135"	.12"	.107"	.093"	.080"	.066"

* Standard top pin length is .171".

** Use .247" top pin for non-control chambers.

Build-Up Pins	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
	.037"	.051"	.066"	.080"	.093"	.107"	.120"	.135"	.149"	.163"
	+1	+2	+3	+4	+5	+6	+7	+8	+9	
	.177"	.192"	.205"	.218"	.232"	.247"	.261"	.275"	.289"	

.552" Diameter

	1	2	3	4	5	6	7	8	9	0
Bottom Pins	.213"	.228"	.241"	.256"	.269"	.283"	.297"	.311"	.326"	.340"
Master Pins		.028"	.042"	.056"	.070"	.084"	.098"	.112"	.126"	

* Standard top pin length is .171".

Build-Up Pins	-8	-7	-6	-5	-4	-3	-2	-1	0	
	.030"	.045"	.058"	.072"	.087"	.100"	.114"	.128"	.142"	
	+1	+2	+3	+4	+5	+6	+7	+8	+9	
	.156"	.171"	.184"	.198"	.212"	.226"	.241"	.253"	.268"	

Notes:

Corbin X Class (System 70)

<http://www.lockreference.com>

MACS: 4
Increment: .028"
Progression: Single Step
E.P.D. Varies
Included Angle: 90°
Root Cut: .053"

Key Origination	
Blackhawk	N/A
CodeMax	Varies
HPC Blitz	CX5
HPC Punch	N/A
ITL	108

Root Depths	
1	.333"
2	.305"
3	.277"
4	.249"
5	.221"
6	.193"

Spacing	
1	.197"
2	.353"
3	.509"
4	.665"
5	.821"
6	.977"
7	1.133"

5 ½ or %	.207"
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T.F.C: .197"

B.C.C: .156"

Notes
1) Read and cut bow-to-tip.
2) .509" diameter plugs have EPD of .504", .552" are .546"
3) For CodeMax, use DSD #301 for IC, DSD #3301 for Non-IC.
4) Use .320" top pin for PL5000 padlock / to block master ring.
5) 5 ½ or % cut used on construction master keys.

.509" Diameter

	1	2	3	4	5	6				
Bottom Pins	.171"	.198"	.228"	.256"	.283"	.311"				
Master Pins	.028"	.056"	.084"	.122"	.140"					
IC Top Pins	.192"	.163"	.135"	.107"	.080"	.080"				

* Standard top pin length is .171".

** Use .247" top pin for non-control chambers.

	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Build-Up Pins	.051"	.080"	.107"	.135"	.163"	.192"	.218"	.247"	.275"	.303"

.552" Diameter

	1	2	3	4	5	6				
Bottom Pins	.213"	.241"	.269"	.297"	.326"	.354"				
Master Pins	.028"	.056"	.084"	.122"	.140"					

* Standard top pin length is .171".

	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Build-Up Pins	.030"	.058"	.087"	.114"	.142"	.171"	.198"	.226"	.253"	.282"

Notes:

Corbin Z Class (Pre-System 70)

<http://www.lockreference.com>

MACS: 8
Increment: .014"
Progression: Two Step
E.P.D. Varies
Included Angle: 90°
Root Cut: .053"

Key Origination	
Blackhawk	Card 438
CodeMax	Varies
HPC Blitz	C14
HPC Punch	N/A
ITL	113

Root Depths	
1	.339"
2	.325"
3	.311"
4	.297"
5	.283"
6	.269"
7	.255"
8	.241"
9	.227"
10	.213"

Spacing	
1	.250"
2	.406"
3	.562"
4	.718"
5	.874"
6	1.030"
7	1.186"

T.F.C.: .250"
B.C.C.: .156"

11*	.199"
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Notes
1) Read and cut tip-to-bow.
2) .509" diameter plugs have EPD of .504", .552" are .546"
3) For CodeMax, use DSD #18 for IC, DSD #3018 for Non-IC.
4) Use .320" top pin for PL5000 padlock / to block master ring.
5) 11 cut used on some construction master keys.

.509" Diameter

	1	2	3	4	5	6	7	8	9	0
Bottom Pins	.160"	.175"	.189"	.203"	.217"	.231"	.245"	.260"	.273"	.288"
Master Pins		.028"	.042"	.056"	.070"	.084"	.098"	.112"	.126"	
IC Top Pins	.192"	.177"	.163"	.149"	.135"	.120"	.107"	.093"	.080"	.066"

* Standard top pin length is .171".

** Use .247" top pin for non-control chambers.

Build-Up Pins	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
	.037"	.051"	.066"	.080"	.093"	.107"	.120"	.135"	.149"	.163"
	+1	+2	+3	+4	+5	+6	+7	+8	+9	
	.177"	.192"	.205"	.218"	.232"	.247"	.261"	.275"	.289"	

.552" Diameter

	1	2	3	4	5	6	7	8	9	0
Bottom Pins	.203"	.217"	.231"	.245"	.260"	.273"	.288"	.301"	.316"	.330"
Master Pins		.028"	.042"	.056"	.070"	.084"	.098"	.112"	.126"	

* Standard top pin length is .171".

Build-Up Pins	-8	-7	-6	-5	-4	-3	-2	-1	0	
	.030"	.045"	.058"	.072"	.087"	.100"	.114"	.128"	.142"	
	+1	+2	+3	+4	+5	+6	+7	+8	+9	
	.156"	.171"	.184"	.198"	.212"	.226"	.241"	.253"	.268"	

Notes:

Kwikset .023"

<http://www.lockreference.com>

MACS: 4
Increment: .023"
Progression: Single Step
E.P.D. .498"
Included Angle: 90°
Root Cut: .084"

Key Origination	
Blackhawk	Card 407
CodeMax	DSD #46
HPC Blitz	C31
HPC Punch	P31
ITL	265

Root Depths	
1	.329"
2	.306"
3	.283"
4	.260"
5	.237"
6	.214"
7	.191"

Spacing	
1	.247"
2	.397"
3	.547"
4	.697"
5	.847"

T.F.C: .247"
B.C.C: .150"

Notes
1) Read and cut bow-to-tip. 2) Use .160" length top pins for construction keying. 3) Used in Corbin 80/Ruswin 751 residential keyways between 1966 - 1992 under "K Class" name. 4) Used for SmartKey platform. 5) 7th depth used in factory generated, non-SmartKey systems.

	1	2	3	4	5	6	7			
Bottom Pins	.172"	.195"	.218"	.241"	.264"	.287"	.310"			
Master Pins	.023"	.046"	.069"	.092"	.115"	.138"				
Top Pins	.180"	.180"	.180"	.180"	.180"	.180"				

Notes:

Ruswin DH Class (Pre-System 70)

<http://www.lockreference.com>

MACS: 7
Increment: .015"
Progression: Two Step
E.P.D. Varies
Included Angle: 90°
Root Cut: .053"

Key Origination	
Blackhawk	Card 428
CodeMax	Varies
HPC Blitz	C42
HPC Punch	N/A
ITL	379

Root Depths	
0	.341"
1	.326"
2	.311"
3	.296"
4	.281"
5	.266"
6	.251"
7	.236"
8	.221"
9	.206"

Spacing	
1	.250"
2	.406"
3	.562"
4	.718"
5	.874"
6	1.030"
7	1.186"

T.F.C.: .250"
B.C.C.: .156"

Notes
1) Read and cut bow-to-tip.
2) .509" diameter plugs have EPD of .501", .552" are .544"
3) For CodeMax, use DSD #57 for IC, DSD #3057 for Non-IC.
4) Use .320" top pin for PL5000 padlock / to block master ring.
5) 10 cut used on some construction master keys.

10*	.191"
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.509" Diameter

	0	1	2	3	4	5	6	7	8	9
Bottom Pins	.160"	.175"	.189"	.203"	.220"	.234"	.248"	.263"	.279"	.294"
Master Pins			.030"	.045"	.060"	.075"	.090"	.105"	.120"	.135"
IC Top Pins	.192"	.177"	.163"	.149"	.133"	.118"	.103"	.087"	.072"	.058"

* Standard top pin length is .171".

** Use .247" top pin for non-control chambers.

Build-Up Pins	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
	.028"	.042"	.058"	.072"	.087"	.103"	.118"	.133"	.149"	.163"
	+1	+2	+3	+4	+5	+6	+7	+8	+9	
.177"	.192"	.208"	.222"	.238"	.253"	.263"	.282"	.298"		

.552" Diameter

	0	1	2	3	4	5	6	7	8	9
Bottom Pins	.203"	.217"	.231"	.248"	.263"	.276"	.291"	.307"	.322"	.337"
Master Pins			.030"	.045"	.060"	.075"	.090"	.105"	.120"	.135"

* Standard top pin length is .171".

Build-Up Pins	-7	-6	-5	-4	-3	-2	-1	0	+1	+2
	.037"	.051"	.066"	.082"	.098"	.112"	.126"	.142"	.156"	.171"
	+3	+4	+5	+6	+7	+8	+9			
.187"	.202"	.218"	.232"	.247"	.261"	.277"				

Notes:

Sargent .020"

<http://www.lockreference.com>

MACS: 7; Varies
Increment: .020"
Progression: Two-Step
E.P.D. .498"
Included Angle: 76°
Root Cut: .051"

Key Origination	
Blackhawk	Card 196
CodeMax	DSD #59
HPC Blitz	C44
HPC Punch	N/A
ITL	388

Root Depths	
1	.330"
2	.310"
3	.290"
4	.270"
5	.250"
6	.230"
7	.210"
8	.190"
9	.170"
10	.150"

Spacing	
1	.215"
2	.371"
3	.527"
4	.683"
5	.839"
6	.995"

T.F.C.: .215"

B.C.C.: .156"

Notes
1) Read and cut bow-to-tip.
2) Used in all current Sargent cores/cylinders and in the following keyway families: A, B, C, G, H, K, L, N, R, V
3) MACS has been listed as 9 on older literature due to specialized cutting wheels no longer used. Follow code machines instructions for producing keys.

	1	2	3	4	5	6	7	8	9	10
Bottom Pins	.170"	.190"	.210"	.230"	.250"	.270"	.290"	.310"	.330"	.350"
Master Pins	—	.040"	.060"	.080"	.100"	.120"	.140"	.160"	.180"	.200"
Top Pins	.200"	.200"	.200"	.200"	.200"	.200"	.200"	.200"	.200"	.200"

6300 Series

	11	12	13	14						
Master Pins	.220"	.240"	.260"	.280"						

Notes:

Schlage Classic

<http://www.lockreference.com>

MACS: 7
Increment: .015"
Progression: Two Step
E.P.D. .500"
Included Angle: 100°
Root Cut: .031"

Key Origination	
Blackhawk	Card 198
CodeMax	DSD #60
HPC Blitz	C45
HPC Punch	P45
ITL	391

Root Depths	
0	.335"
1	.320"
2	.305"
3	.290"
4	.275"
5	.260"
6	.245"
7	.230"
8	.215"
9	.200"

Spacing	
1	.231"
2	.387"
3	.543"
4	.699"
5	.855"
6	1.011"

Notes
1) Read and cut tip-to-bow.
2) Sometimes referred to as "Large Pin" specification.

T.F.C: .231"

B.C.C: .156"

	0	1	2	3	4	5	6	7	8	9
Bottom Pins	.165"	.180"	.195"	.210"	.225"	.240"	.255"	.270"	.285"	.300"
Master Pins			.030"	.045"	.060"	.075"	.090"	.105"	.120"	
Top Pins	.235"			.200"			.165"			

Notes:

Weiser

<http://www.lockreference.com>

MACS: 6
Increment: .018"
Progression: Two Step
E.P.D. .483"
Included Angle: 100°
Root Cut: .090"

Key Origination	
Blackhawk	Card 203
CodeMax	DSD #65
HPC Blitz	C50
HPC Punch	N/A
ITL	167

Root Depths	
0	.315"
1	.297"
2	.279"
3	.261"
4	.243"
5	.225"
6	.207"
7	.189"
8	.171"
9	.153"

Spacing	
1	.237"
2	.393"
3	.549"
4	.705"
5	.861"
6	1.017"
7	1.173"

T.F.C.: .237"
B.C.C.: .156"

Notes
1) Read and cut bow-to-tip.
2) Used for Falcon multiplex key family.

	0	1	2	3	4	5	6	7	8	9
Bottom Pins	.168"	.186"	.204"	.222"	.240"	.258"	.276"	.294"	.312"	.330"
Master Pins			.036"	.054"	.072"	.090"	.108"	.126"	.145"	.160"
Top Pins	.185"	.185"	.185"	.185"	.185"	.185"	.185"	.185"	.185"	.185"

Notes:

Yale .019"

<http://www.lockreference.com>

MACS: Varies
Increment: .019"
Progression: Two Step
E.P.D. .502"
Included Angle: Varies
Root Cut: .054"

Key Origination	
Blackhawk	Card 208
CodeMax	DSD #72
HPC Blitz	C57
HPC Punch	N/A
ITL	476

Root Depths	
0	.320"
1	.301"
2	.282"
3	.263"
4	.244"
5	.225"
6	.206"
7	.187"
8	.168"
9	.149"

Spacing	
1	.200"
2	.365"
3	.530"
4	.695"
5	.860"
6	1.025"
7	1.190"

T.F.C: .200"
B.C.C: .165"

Notes
1) Read and cut bow-to-tip.
2) Included angle can be 110°, 95°, or 86° to produce MACS of 4, 5, and 6, respectively.

	0	1	2	3	4	5	6	7	8	9
Bottom Pins	.182"	.201"	.220"	.239"	.258"	.277"	.296"	.315"	.334"	.353"
Master Pins			.038"	.057"	.076"	.095"	.114"	.133"	.152"	
Top Pins	.230"			.190"			.152"			.114"

Notes:

Yale .025"

<http://www.lockreference.com>

MACS: Varies
Increment: .025"
Progression: Single Step
E.P.D. .502"
Included Angle: Varies
Root Cut: .054"

Key Origination	
Blackhawk	N/A
CodeMax	DSD #79
HPC Blitz	CX9
HPC Punch	N/A
ITL	484

Root Depths	
0	.320"
1	.295"
2	.270"
3	.245"
4	.220"
5	.195"
6	.170"
7	.145"

Spacing	
1	.200"
2	.365"
3	.530"
4	.695"
5	.860"
6	1.025"
7	1.190"

Notes
1) Read and cut bow-to-tip.
2) Included angle can be 110°, 95°, or 86° to produce MACS of 4, 5, and 6, respectively.

T.F.C: .200"
B.C.C: .165"

	0	1	2	3	4	5	6	7
Bottom Pins	.182"	.207"	.232"	.258"	.282"	.307"	.334"	.357"
Master Pins			.050"	.075"	.100"	.125"	.152"	.175"
Top Pins	.230"			.190"			.152"	

Notes: