Standard Cylinders

ARROW

SHOULDER TO FIRST CUT: .265''
CENTER TO CENTER: .155''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.312	.178	
# 1	.298	.192	
# 2	.284	.206	.028
# 3	.270	.220	
# 4	.256	.234	.056
# 5	.242	.248	
# 6	.228	.262	.084
# 7	.214	.276	
# 8	.200	.290	.112
# 9	.186	.304	

CORBIN

	Z BOW	X BOW
SHOULDER TO FIRST CUT:	.250''	.197''

CENTER TO CENTER: .156''

MACS: 8

	ROOT DEPTH		BOTTOM PINS		MASTER PINS
	Z BOW	X BOW	Z BOW	X BOW	
# 1	.343	.333	.160	.171	
# 2	.329	.319	.174	.185	.028
# 3	.315	.305	.189	.198	.042
# 4	.301	.291	.203	.212	.056
# 5	.287	.277	.218	.226	.069
# 6	.273	.263	.231	.241	.084

```
# 7   .259     .249     .246     .256     .099
# 8   .245     .235     .259     .269     .112
# 9   .231     .221     .273     .284     .127
# 10 .217     .207     .287     .297
```

DEXTER

SHOULDER TO FIRST CUT: .216''
CENTER TO CENTER: .155''

MACS: 7

```
      ROOT    BOTTOM   MASTER
      DEPTH   PINS     PINS
      -----   ------   ------
# 0   .320    .165
# 1   .305    .180
# 2   .290    .195     .030
# 3   .275    .210
# 4   .260    .225     .060
# 5   .245    .240
# 6   .230    .255     .090
# 7   .215    .270
# 8   .200    .285     .120
# 9   .185    .300
```

EMHART

SHOULDER TO FIRST CUT: .250''
CENTER TO CENTER: .156''

MACS: DEPENDENT ON ADJACENT ANGLES

```
     ROOT    BOTTOM   MASTER
     DEPTH   PINS     PINS    DRIVERS
     -----   ------   -----   -------
#1                            .193
#2   .305    .242     .097    .158
#3   .277    .270     .125
#4   .249    .298     .153
#5   .221    .326
#6   .193    .354
```

EMHART HIGH SECURITY KEYING RESTRICTIONS

----

1. NO # 1 CUTS ALLOWED -- CUT WILL BE TOO
    SHALLOW TO MAINTAIN ANGLE
    * EVEN THOUGH THESE CYLINDERS ARE COMPATIBLE
      WITH SYSTEM 70, PROGRESSION IS LIMITED TO 2 - 6

    * MIXING THESE HIGH SECURITY CYLINDERS WITH
      CONVENTIONAL SYSTEM 70 CYLINDERS MUST BE
      CAREFULLY PLANNED FROM INCEPTION -- PLEASE REFER
      TO THE CORBIN/RUSSWIN CYLINDER MANUAL
      FOR MORE INFORMATION

2. THERE IS NO # 1 MASTER PIN --
    THEREFORE CHANGE KEY CUT MUST BE
    AT LEAST 2 STEPS FROM MASTER CUT

3. MACS IS DEPENDENT ON ADJACENT ANGLES
    WHEN ADJACENT ANGLES ARE THE SAME, MACS IS 4
    WHEN ADJACENT ANGLES ARE DIFFERENT, MACS IS 3

4. WHEN THE BOTTOM AND MASTER PINS
    TOTAL 2, 3, OR 4, THE DRIVER IS A # 1

    WHEN THE BOTTOM AND MASTER PINS
    TOTAL 5 OR 6, THE DRIVER IS A # 2

FALCON

SHOULDER TO FIRST CUT: .237''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.315	.168	
# 1	.297	.186	
# 2	.279	.204	.036
# 3	.261	.222	
# 4	.243	.240	.072
# 5	.225	.258	
# 6	.207	.276	.108
# 7	.189	.294	
# 8	.171	.312	.144
# 9	.153	.330	

ILCO

SHOULDER TO FIRST CUT: .277''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.320	.180	
# 1	.302	.198	
# 2	.284	.216	.036
# 3	.266	.234	
# 4	.248	.252	.072
# 5	.230	.270	
# 6	.212	.288	.108
# 7	.194	.306	
# 8	.176	.324	.144
# 9	.158	.342	

KWIKSET

SHOULDER TO FIRST CUT: .247''
CENTER TO CENTER: .150''

TITAN -- SHOULDER TO FIRST CUT: .097''
**   CENTER TO CENTER: .150''**

MACS: 4

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 1	.329	.172	.023
# 2	.306	.195	.046
# 3	.283	.218	.069
# 4	.260	.241	.092
# 5	.237	.264	.115
# 6	.214	.287	***
# 7	.191	.310	

*** Kwikset does not make a #6 master wafer.

LOCKWOOD

SHOULDER TO FIRST CUT: .277''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.320	.150	
# 1	.305	.165	
# 2	.290	.180	.030
# 3	.275	.195	.045
# 4	.260	.210	.060
# 5	.245	.225	.075
# 6	.230	.240	.090
# 7	.215	.355	.105
# 8	.200	.370	.120
# 9	.185	.385	.135

MEDECO

SHOULDER TO FIRST CUT: .244''
CENTER TO CENTER: .170''

MACS: 4

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	DRIVERS
# 1	.266	.236	.030	.270
# 2	.236	.266	.060	.240
# 3	.206	.296	.090	.210
# 4	.176	.326	.120	.180
# 5	.146	.356	.150	.150
# 6	.116	.386		.120

MEDECO DOES NOT ALLOW CHANGE KEYS WITH
A # 6 CUT NEXT TO THE SHOULDER

MEDECO BIAXIAL

SHOULDER TO FIRST CUT: FORE: .213
**   AFT: .275**

```
CENTER TO CENTER:  AFT--FORE:    .108
                   FORE--FORE:   .170
                   AFT--AFT:     .170
                   FORE--AFT:    .232


MACS:  AFT--FORE:    2
       FORE--FORE:   3
       AFT--AFT:     3
       FORE--AFT:    4
```

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	DRIVERS
# 1	.264	.239	.025	.270
# 2	.239	.264	.050	.240
# 3	.214	.289	.075	.210
# 4	.189	.314	.100	.180
# 5	.164	.339	.125	.150
# 6	.139	.364		

MEDECO KEYMARK

SHOULDER TO FIRST CUT: .195''

TIP TO FIRST CUT: .090''

CUT TO CUT: .150''

MACS: 9

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.1385	.110	---
# 1	.1260	.122	---
# 2	.1135	.135	.025
# 3	.1010	.147	.037
# 4	.0885	.160	.050
# 5	.0760	.172	.062
# 6	.0635	.185	.075
# 7	.0510	.197*	.087
# 8	.0385	.210*	.100
# 9	.0260	.222*	.112

* Spool Pins

RUSSWIN

SHOULDER TO FIRST CUT: .250''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.341	.160	
# 1	.326	.175	
# 2	.311	.189	.030
# 3	.296	.203	.045
# 4	.281	.220	.060
# 5	.266	.234	.075
# 6	.251	.248	.090
# 7	.236	.263	.105
# 8	.221	.279	.120
# 9	.206	.294	.135

SARGENT

SHOULDER TO FIRST CUT: .216''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 1	.328	.170	
# 2	.308	.190	.040
# 3	.288	.210	.060
# 4	.268	.230	.080
# 5	.248	.250	.100
# 6	.228	.270	.120
# 7	.208	.290	.140
# 8	.188	.310	.160
# 9	.168	.330	.180
# 10	.148	.350	

SCHLAGE

```
SHOULDER TO FIRST CUT:  .231''
CENTER TO CENTER:  .156''
```

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.335	.165	
# 1	.320	.180	
# 2	.305	.195	.030
# 3	.290	.210	
# 4	.275	.225	.060
# 5	.260	.240	
# 6	.245	.255	.090
# 7	.230	.270	
# 8	.215	.285	.120
# 9	.200	.300	

SEGAL

```
SHOULDER TO FIRST CUT:  .262''
CENTER TO CENTER:  .156''
```

MACS: 5

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.315	.166	
# 1	.295	.186	.020
# 2	.275	.206	.040
# 3	.255	.226	.060
# 4	.235	.246	.080
# 5	.215	.266	.100
# 6	.195	.286	***

*** No #6 master wafer

SYSTEM 70

```
SHOULDER TO FIRST CUT:  .250''
CENTER TO CENTER:  .156''
```

MACS: 4

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 1	.339	.160	.028
# 2	.311	.189	.056
# 3	.283	.217	.084
# 4	.255	.245	.112
# 5	.227	.273	.140
# 6	.199	.301	

WEISER

SHOULDER TO FIRST CUT: .237''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.315	.168	
# 1	.297	.186	
# 2	.279	.204	.036
# 3	.261	.222	
# 4	.243	.240	.072
# 5	.225	.258	
# 6	.207	.276	.108
# 7	.189	.294	
# 8	.171	.312	.144
# 9	.153	.330	

WESLOCK

SHOULDER TO FIRST CUT: .220''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.330	.156	
# 1	.314	.172	
# 2	.299	.187	.030

```
# 3   .283      .202
# 4   .268      .219      .060
# 5   .252      .234
# 6   .236      .250      .090
# 7   .221      .265
# 8   .205      .281      .120
# 9   .190      .297
```

YALE

SHOULDER TO FIRST CUT: .206''
CENTER TO CENTER: .165''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS
# 0	.320	.182	
# 1	.301	.201	
# 2	.282	.220	.038
# 3	.263	.239	
# 4	.244	.258	.076
# 5	.225	.277	
# 6	.206	.296	.114
# 7	.187	.315	
# 8	.168	.334	.152
# 9	.149	.353	

Interchangeable Core

A2 (Arrow, Falcon, Eagle, Best)

MACS: 9

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 0	.318	.110	---	---	
# 1	.305	.122	---	---	**

```
# 2   .293    .135    .025    .025
# 3   .280    .147    .037    .037
# 4   .268    .160    .050    .050    .050
# 5   .255    .172    .062    .062    .062
# 6   .243    .185    .075    .075    .075
# 7   .230    .197    .087    .087    .087
# 8   .218    .210    .100    .100    .100
# 9   .205    .222    .112    .112    .112
#10                           .125    .125
#11                           .137    .137
#12                           .150    .150
#13                           .162    .162
#14                           .175
#15                           .187
#16                           .200
#17                           .212
#18                           .225
#19                           .237
```

If the master cut is even, make the
corresponding control cut odd.

If the master cut is odd, make the
corresponding control cut even.

Drivers: To calculate drivers,
add 10 to the control key cut and subtract from 23.
This calculation is constant throughout the system.

A3 (Arrow, Falcon, Eagle, Best)

MACS: 6

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 0	.318	.110			
# 1	.300	.128	.018*	.018	
# 2	.282	.146	.036	.036	
# 3	.264	.164	.054	.054	
# 4	.246	.182	.072	.072	.072
# 5	.228	.200	.090	.090	.090
# 6	.210	.218	.108	.108	.108
# 7				.126	.126
# 8				.144	.144
# 9				.162	.162
#10				.180	.180
#11				.198	.198

```
#12                                              .216
#13                                              .234
```

Drivers: To calculate drivers,
add 7 to the control key cut and subtract from 16.
This calculation is constant throughout the system.

MANY A3 SYSTEMS DO NOT USE CHANGE KEYS
WITH CUTS WITHIN 1 STEP OF CORRESPONDING
MASTER CUT.

A4 (Arrow, Falcon, Eagle, Best)

MACS: 5

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 0	.318	.110			
# 1	.297	.131	.021	.021	
# 2	.276	.152	.042	.042	
# 3	.255	.173	.063	.063	.063
# 4	.234	.195	.084	.084	.084
# 5	.213	.216	.105	.105	.105
# 6				.126	.126
# 7				.147	.147
# 8				.168	.168
# 9				.189	.189
#10				.210	.210
#11				.231	.231
#12				.252	

Drivers: To calculate drivers,
add 6 to the control key cut and subtract from 14.
This calculation is constant throughout the system.

CORBIN

	Z BOW	X BOW
	-----	-----
SHOULDER TO FIRST CUT:	.250''	.197''
CENTER TO CENTER:	.156''	

MACS: 8

	ROOT	BOTTOM	MASTER	CONTROL

	DEPTH		PINS		PINS	PINS	DRIVERS
	Z BOW	X BOW	Z BOW	X BOW			
						-9=.037	
						-8=.051	0=.247
# 1	.339	.333	.160	.171		-7=.066	.192
# 2	.325	.319	.174	.185	.028	-6=.080	.177
# 3	.311	.305	.189	.198	.042	-5=.093	.163
# 4	.297	.291	.203	.212	.056	-4=.107	.149
# 5	.283	.277	.218	.226	.069	-3=.120	.135
# 6	.269	.263	.231	.241	.084	-2=.135	.120
# 7	.255	.249	.246	.256	.099	-1=.149	.107
# 8	.241	.235	.259	.269	.112	0=.163	.093
# 9	.227	.221	.273	.284	.127	+1=.177	.080
# 10	.213	.207	.287	.297		+2=.192	.066
						+3=.205	
						+4=.218	
						+5=.232	
						+6=.247	
						+7=.261	
						+8=.275	
						+9=.289	

Non-control chambers use a #0 driver.
In the control chambers the drivers are the same
number as the corresponding control key cut.

EMHART

SHOULDER TO FIRST CUT: .250''
CENTER TO CENTER: .156''

MACS: DEPENDENT ON ADJACENT ANGLES

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	DRIVERS	CONTROL CHAMBERS (Use conventional pins)			
					BOTTOM PINS	CONTROL PINS	MASTER PINS	DRIVERS
# 1				.193		-4=.030	.028	
# 2	.305	.242	.097	.158	.231	-3=.058	.056	.198
# 3	.277	.270	.125		.260	-2=.087	.084	.171
# 4	.249	.298	.153		.288	-1=.114	.112	.142
# 5	.221	.326			.316	0=.142		.114
# 6	.193	.354			.344	+1=.171		.087
						+2=.198		
						+3=.226		

                              +4=.253

EMHART HIGH SECURITY KEYING RESTRICTIONS
----

1. NO # 1 CUTS ALLOWED -- CUT WILL BE TOO
    SHALLOW TO MAINTAIN ANGLE
  * EVEN THOUGH THESE CYLINDERS ARE COMPATIBLE
     WITH SYSTEM 70, PROGRESSION IS LIMITED TO 2 - 6

  * MIXING THESE HIGH SECURITY CYLINDERS WITH
     CONVENTIONAL SYSTEM 70 CYLINDERS MUST BE
     CAREFULLY PLANNED FROM INCEPTION -- PLEASE REFER
     TO THE CORBIN/RUSSWIN CYLINDER MANUAL
     FOR MORE INFORMATION

2. THERE IS NO # 1 MASTER PIN --
    THEREFORE CHANGE KEY CUT MUST BE
    AT LEAST 2 STEPS FROM MASTER CUT

3. MACS IS DEPENDENT ON ADJACENT ANGLES
    WHEN ADJACENT ANGLES ARE THE SAME, MACS IS 4
    WHEN ADJACENT ANGLES ARE DIFFERENT, MACS IS 3

4. CHANGE KEY CUTS CANNOT BE THE SAME DEPTH AS
    CONTROL KEY CUTS IN BOTH CONTROL CHAMBERS,
    REGARDLESS OF THE ANGLES

5. WHEN THE BOTTOM AND MASTER PINS TOTAL 2, 3, OR 4,
    THE DRIVER IS A # 1

    WHEN THE BOTTOM AND MASTER PINS TOTAL 5 OR 6,
    THE DRIVER IS A # 2.

    THIS DOES NOT APPLY TO THE CONTROL CHAMBERS.
    SEE # 6 BELOW.

6. CONTROL CHAMBERS USE CONVENTIONAL PINS, THEREFORE THEY
    USE DIFFERENT DRIVERS AND BUILD-UP PINS

KABA A2

140 SPACING -- FROM TIP -   .136''
                FROM BOW -   1.030''
                CUT TO CUT - .140

```
                 MACS:   8

150 SPACING -- FROM TIP -    .086''
                 FROM BOW -  1.080''
                 CUT TO CUT -  .150

                 MACS:   9
```

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 0	.318	.110	---	---	
# 1	.305	.122	---	--- **	
# 2	.293	.135	.025	.025	
# 3	.280	.147	.037	.037	
# 4	.268	.160	.050	.050	.050
# 5	.255	.172	.062	.062	.062
# 6	.243	.185	.075	.075	.075
# 7	.230	.197	.087	.087	.087
# 8	.218	.210	.100	.100	.100
# 9	.205	.222	.112	.112	.112
#10				.125	.125
#11				.137	.137
#12				.150	.150
#13				.162	.162
#14				.175	
#15				.187	
#16				.200	
#17				.212	
#18				.225	
#19				.237	

```
Drivers: To calculate drivers,
add 10 to the control key cut and subtract from 23.
This calculation is constant throughout the system.

Some depths in position #6 (next to Peak) require
an asymmetrical cutter:  A2 -- 7, 8, and 9
                         A4 -- 4 and 5
```

```
KABA A4

140 SPACING -- FROM TIP -    .136''
                 FROM BOW -  1.030''
                 CUT TO CUT -  .140

                 MACS:   4
```

```
150 SPACING -- FROM TIP -    .086''
                 FROM BOW -  1.080''
                 CUT TO CUT - .150

                 MACS:  5
```

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 0	.318	.110			
# 1	.297	.131	.021	.021	
# 2	.276	.152	.042	.042	
# 3	.255	.173	.063	.063	.063
# 4	.234	.195	.084	.084	.084
# 5	.213	.216	.105	.105	.105
# 6				.126	.126
# 7				.147	.147
# 8				.168	.168
# 9				.189	.189
#10				.210	.210
#11				.231	.231
#12				.252	

Drivers: To calculate drivers,
add 6 to the control key cut and subtract from 14.
This calculation is constant throughout the system.

Some depths in position #6 (next to Peak) require
an asymmetrical cutter: A2 -- 7, 8, and 9
                         A4 -- 4 and 5

MEDECO

SHOULDER TO FIRST CUT: .244''
CENTER TO CENTER: .170''

MACS: 4

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	DRIVERS
# 1	.266	.236	.030	.270
# 2	.236	.266	.060	.240
# 3	.206	.296	.090	.210
# 4	.176	.326	.120	.180
# 5	.146	.356	.150	.150
# 6	.116	.386		.120

The stack height is .506".
Drivers are the same number as the
corresponding change key cut.

MEDECO INTERCHANGEABLE CORE KEYING RESTRICTIONS

MEDECO DOES NOT USE CONTROL PINS IN
THE TWO CONTROL CHAMBERS.

THE CONTROL KEY CUTS IN THESE CHAMBERS
MUST BE 3 STEPS SHALLOWER THAN THE MASTER CUTS
IN THESE POSITIONS. MULTI-CORE DOES THIS AUTOMATICALLY.

1.   A #6 CUT CANNOT BE USED NEXT TO THE SHOULDER

2.   MASTER KEY CUTS IN CHAMBERS 3 AND 4 MUST BE 4, 5, OR 6

3.   CHANGE KEY CUTS IN CHAMBER 3 OR 4 MUST BE RESTRICTED,
     DEPENDING ON THE MASTER CUTS.

MASTER CUT   CHANGE KEY POSSIBILITIES
----------   ------------------------
    4   2 AND 3   OR   2 AND 6   OR   3 AND 5   OR   5 AND 6
    5   1 AND 3   OR   1 AND 6   OR   3 AND 4   OR   4 AND 6
    6   1 AND 2   OR   2 AND 4   OR   1 AND 5   OR   4 AND 5

4.   CHANGE KEY CUTS CANNOT BE THE SAME AS CONTROL KEY CUTS
     IN BOTH CONTROL POSITIONS

MEDECO BIAXIAL ICore

SHOULDER TO FIRST CUT: FORE: .213
                        AFT: .275

CENTER TO CENTER: AFT--FORE: .108
                   FORE--FORE: .170
                   AFT--AFT: .170
                   FORE--AFT: .232

MACS: AFT--FORE: 2
       FORE--FORE: 3
       AFT--AFT: 3
       FORE--AFT: 4

         ROOT   BOTTOM   MASTER

```
              DEPTH     PINS      PINS      DRIVERS
              -----     ------    ------    -------
# 1           .264      .239      .025      .270
# 2           .239      .264      .050      .240
# 3           .214      .289      .075      .210
# 4           .189      .314      .100      .180
# 5           .164      .339      .125      .150
# 6           .139      .364
```

MEDECO INTERCHANGEABLE CORE KEYING RESTRICTIONS

MEDECO DOES NOT USE CONTROL PINS IN
THE TWO CONTROL CHAMBERS.

THE CONTROL KEY CUTS IN THESE CHAMBERS
MUST BE 3 STEPS SHALLOWER THAN THE MASTER CUTS
IN THESE POSITIONS. MULTI-CORE DOES THIS AUTOMATICALLY.

1. A #6 CUT CANNOT BE USED NEXT TO THE SHOULDER

2. MASTER KEY CUTS IN CHAMBERS 3 AND 4 MUST BE 4, 5, OR 6

3. CHANGE KEY CUTS IN CHAMBER 3 OR 4 MUST BE RESTRICTED,
    DEPENDING ON THE MASTER CUTS.

```
MASTER CUT     CHANGE KEY POSSIBILITIES
----------     ------------------------
    4          2 AND 3   OR  2 AND 6   OR  3 AND 5   OR  5 AND 6
    5          1 AND 3   OR  1 AND 6   OR  3 AND 4   OR  4 AND 6
    6          1 AND 2   OR  2 AND 4   OR  1 AND 5   OR  4 AND 5
```

4. CHANGE KEY CUTS CANNOT BE THE SAME AS CONTROL KEY CUTS
    IN BOTH CONTROL POSITIONS

MEDECO KEYMARK

SHOULDER TO FIRST CUT: .195''

TIP TO FIRST CUT: .090''

CUT TO CUT: .150''

MACS: 9

```
     ROOT     BOTTOM   MASTER   CONTROL
```

	DEPTH	PINS	PINS	PINS	DRIVERS
# 0	.1385	.110	---	---	
# 1	.1260	.122	---	---	
# 2	.1135	.135	.025	.025	
# 3	.1010	.147	.037	.037	
# 4	.0885	.160	.050	.050	.050
# 5	.0760	.172	.062	.062	.062
# 6	.0635	.185	.075	.075	.075
# 7	.0510	.197*	.087	.087	.087
# 8	.0385	.210*	.100	.100	.100
# 9	.0260	.222*	.112	.112	.112
#10				.125	.125
#11				.137*	.137
#12				.150	.150
#13				.162*	.162
#14				.175	
#15				.187*	
#16				.200	
#17				.212*	
#18				.225	
#19				.237	

                 * Spool Pins

If the master cut is even, make the
corresponding control cut odd.

If the master cut is odd, make the
corresponding control cut even.

RUSSWIN

SHOULDER TO FIRST CUT: .250''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 0	.341	.160		-9=.028	.192
# 1	.326	.175		-8=.042	.177
# 2	.311	.189	.030	-7=.058	.163
# 3	.296	.203	.045	-6=.072	.149
# 4	.281	.220	.060	-5=.087	.133
# 5	.266	.234	.075	-4=.103	.118

```
# 6    .251      .248      .090      -3=.118      .103
# 7    .236      .263      .105      -2=.133      .087
# 8    .221      .279      .120      -1=.149      .072
# 9    .206      .294      .135       0=.163      .058
                                     +1=.177
                                     +2=.192      FOR
                                     +3=.208      NON-CONTROL
                                     +4=.222      CHAMBERS USE
                                     +5=.238      .247
                                     +6=.253
                                     +7=.268
                                     +8=.282
                                     +9=.298
```

SARGENT

SHOULDER TO FIRST CUT: .216''
CENTER TO CENTER: .156''

MACS: 7

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 1	.328	.170			
# 2	.308	.190	.040	.040	.040
# 3	.288	.210	.060	.060	.060
# 4	.268	.230	.080	.080	.080
# 5	.248	.250	.100	.100	.100
# 6	.228	.270	.120	.120	.120
# 7	.208	.290	.140	.140	.140
# 8	.188	.310	.160	.160	.160
# 9	.168	.330	.180	.180	.180
# 10	.148	.350		.200	.200
# 11				.220	.220
# 12				.240	.240
# 13				.260	.260
# 14				.280	.280

Drivers: Chambers 1, 2, 5 and 6 have a stack height of 15.

Control chambers 3 and 4: stack height is 20.
Add 8 to the control key cut and subtract from 20.
This is constant throughout the system.

SARGENT INTERCHANGEABLE CORE KEYING RESTRICTIONS
----

1. CONTROL CUT CANNOT BE THE SAME AS THE
    CORRESPONDING MASTER CUT

2. CONTROL CUT AND CORRESPONDING MASTER CUT
    MUST BE WITHIN 7 STEPS OF EACH OTHER.

3. IF THE MASTER CUT IS EVEN, CORRESPONDING
    CONTROL CUT MUST BE EVEN

4. IF THE MASTER CUT IS ODD, CORRESPONDING
    CONTROL CUT MUST BE ODD

5. CHANGE KEY CUTS CANNOT BE THE SAME AS
    CONTROL KEY CUTS IN BOTH CONTROL CHAMBERS

SYSTEM 70

SHOULDER TO FIRST CUT: .250''
CENTER TO CENTER: .156''

MACS: 4

	ROOT DEPTH	BOTTOM PINS	MASTER PINS	CONTROL PINS	DRIVERS
# 1	.339	.160	.028	-4=.051	0=.247
# 2	.311	.189	.056	-3=.080	.192
# 3	.283	.217	.084	-2=.107	.163
# 4	.255	.245	.112	-1=.135	.135
# 5	.227	.273	.140	0=.163	.107
# 6	.199	.301		+1=.192	.080
				+2=.218	.080
				+3=.247	
				+4=.275	
				+5=.303	

Non-control chambers use a #0 driver.
In the control chambers the drivers are the same
number as the corresponding control key cut.
This is constant throughout the system.

SYSTEM 70 KEYING RESTRICTIONS
----

1. No #1 cut allowed in the control position of the
    control key.

2. The control key must be the same as the master key
    except for 2 positions (the two different positions
    must be in position 2, 3, 4 or 5)

3. The two control cuts that are different may not be
    used in the system progression.

4. If the system is also using high security cylinders,
    the two different positions must be positions 2 and 3.
    These are the only two control chambers in the
    high security cylinders.