



Alligator pattern checklist

Use the 24 bump pumping rosette with a 1-1/8" rubber or an 18 bump pumping rosette with a 2" rubber. The blank must be turned to a high tolerance and finished very well as the cutting will leave much of the original surface. The pen in the picture was done with a 24 bump rosette.

Phasing		Indexing		Phasing		Indexing	
Step	Detent position	Index		Step	Detent position	Index	
1	Center	0		13	Center	180	
2	Outside	15		14	Outside	195	
3	Center	30		15	Center	210	
4	Outside	45		16	Outside	225	
5	Center	60		17	Center	240	
6	Outside	75		18	Outside	255	
7	Center	90		19	Center	270	
8	Outside	105		20	Outside	285	
9	Center	120		21	Center	300	
10	Outside	135		22	Outside	315	
11	Center	150		23	Center	330	
12	Outside	165		24	Outside	345	



Modified Barleycorn pattern checklist

Use the 18 bump pumping rosette with the 2" rubber. **Set the crossing wheel at 24 and move 50% as indicated in the identified steps. Mark the 24 center notch and one outside notch with a Sharpie for reference.**

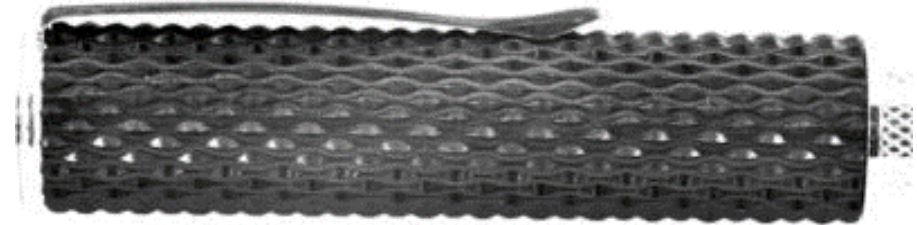
Phasing				Indexing				Phasing				Indexing			
Step	Detent position			Index		Step	Detent Position			Index					
1	Center			0		19	Outside			180					
2	Outside			0		20	Center			180					
3	Outside			20		21	Center			200					
4	Center			20		22	Outside			200					
5	Center			40		23	Outside			220					
6	Outside			40		24	Center			220					
7	Outside			60		25	Center			240					
8	Center			60		26	Outside			240					
9	Center			80		27	Outside			260					
10	Outside			80		28	Center			260					
11	Outside			100		29	Center			280					
12	Center			100		30	Outside			280					
13	Center			120		31	Outside			300					
14	Outside			120		32	Center			300					
15	Outside			140		33	Center			320					
16	Center			140		34	Outside			320					
17	Center			160		35	Outside			340					
18	Outside			160		36	Center			340					



Barleycorn with Space pattern checklist

Use the 2400 Engine Turning Rosette with a 4" rubber. Set the crossing wheel at 24 and move 50% with EVERY OTHER cut. Mark the 24 center notch and one outside notch with a Sharpie for reference. Do not phase on every third cut.

Phasing				Indexing		Phasing				Indexing	
Step	Detent position			Index		Step	Detent Position			Index	
1	Center			0		19	Center			180	
2	Outside			10		20	Outside			190	
3	Outside			20		21	Outside			200	
4	Center			30		22	Center			210	
5	Outside			40		23	Outside			220	
6	Outside			50		24	Outside			230	
7	Center			60		25	Center			240	
8	Outside			70		26	Outside			250	
9	Outside			80		27	Outside			260	
10	Center			90		28	Center			270	
11	Outside			100		29	Outside			280	
12	Outside			110		30	Outside			290	
13	Center			120		31	Center			300	
14	Outside			130		32	Outside			310	
15	Outside			140		33	Outside			320	
16	Center			150		34	Center			330	
17	Outside			160		35	Outside			340	
18	Outside			170		36	Outside			350	



Barleycorn pattern checklist

Use the 2400 Engine Turning Rosette with a 4" rubber. **Set the crossing wheel at 24 and move 50% with each cut. Mark the 24 center notch and one outside notch with a Sharpie for reference.**

Phasing		Indexing		Phasing		Indexing	
Step	Detent Position	Index		Step	Detent Position	Index	
1	Center	0		19	Center	180	
2	Outside	10		20	Outside	190	
3	Center	20		21	Center	200	
4	Outside	30		22	Outside	210	
5	Center	40		23	Center	220	
6	Outside	50		24	Outside	230	
7	Center	60		25	Center	240	
8	Outside	70		26	Outside	250	
9	Center	80		27	Center	260	
10	Outside	90		28	Outside	270	
11	Center	100		29	Center	280	
12	Outside	110		30	Outside	290	
13	Center	120		31	Center	300	
14	Outside	130		32	Outside	310	
15	Center	140		33	Center	320	
16	Outside	150		34	Outside	330	
17	Center	160		35	Center	340	
18	Outside	170		36	Outside	350	



Basket Weave or Cross Stitch Pattern checklist

Use a 24 bump pumping rosette with a 1-1/8" rubber or an 18 bump pumping rosette with a 2" rubber. Set the detent to the "0" position of the 288 setting (300) on the crossing plate.
 When phasing, move the detent two notches each time. **Note: Make the 1st cut in position "0" and phase three times giving a total of 4 curs on the 1st run.**

Phasing				Indexing		Phasing				Indexing	
Step	Direction	Detent movement	X	Index	X	Step	Direction	Detent movement	X	Index	X
0	0	Start in center notch		0		37	CW	Move 2 notches		185	
1	CW	Move 2 notches		5		38	CW	Move 2 notches		190	
2	CW	Move 2 notches		10		39	CW	Move 2 notches		195	
3	CW	Move 2 notches		15		40	CCW	Move 2 notches		200	
4	CCW	Move 2 notches		20		41	CCW	Move 2 notches		205	
5	CCW	Move 2 notches		25		42	CCW	Move 2 notches		210	
6	CCW	Move 2 notches		30		43	CW	Move 2 notches		215	
7	CW	Move 2 notches		35		44	CW	Move 2 notches		220	
8	CW	Move 2 notches		40		45	CW	Move 2 notches		225	
9	CW	Move 2 notches		45		46	CCW	Move 2 notches		230	
10	CCW	Move 2 notches		50		47	CCW	Move 2 notches		235	
11	CCW	Move 2 notches		55		48	CCW	Move 2 notches		240	
12	CCW	Move 2 notches		60		49	CW	Move 2 notches		245	
13	CW	Move 2 notches		65		50	CW	Move 2 notches		250	
14	CW	Move 2 notches		70		51	CW	Move 2 notches		255	
15	CW	Move 2 notches		75		52	CCW	Move 2 notches		260	
16	CCW	Move 2 notches		80		53	CCW	Move 2 notches		265	
17	CCW	Move 2 notches		85		54	CCW	Move 2 notches		270	
18	CCW	Move 2 notches		90		55	CW	Move 2 notches		275	
19	CW	Move 2 notches		95		56	CW	Move 2 notches		280	
20	CW	Move 2 notches		100		57	CW	Move 2 notches		285	
21	CW	Move 2 notches		105		58	CCW	Move 2 notches		290	
22	CCW	Move 2 notches		110		59	CCW	Move 2 notches		295	
23	CCW	Move 2 notches		115		60	CCW	Move 2 notches		300	
24	CCW	Move 2 notches		120		61	CW	Move 2 notches		305	
25	CW	Move 2 notches		125		62	CW	Move 2 notches		310	
26	CW	Move 2 notches		130		63	CW	Move 2 notches		315	
27	CW	Move 2 notches		135		64	CCW	Move 2 notches		320	
28	CCW	Move 2 notches		140		65	CCW	Move 2 notches		325	
29	CCW	Move 2 notches		145		66	CCW	Move 2 notches		330	
30	CCW	Move 2 notches		150		67	CW	Move 2 notches		335	
31	CW	Move 2 notches		155		68	CW	Move 2 notches		340	
32	CW	Move 2 notches		160		69	CW	Move 2 notches		345	
33	CW	Move 2 notches		165		70	CCW	Move 2 notches		350	
34	CCW	Move 2 notches		170		71	CCW	Move 2 notches		355	
35	CCW	Move 2 notches		175		Checked everything in order? You now have a perfect pen tube					
36	CCW	Move 2 notches		180							



Drape, 3 Repetitions pattern checklist

Use the 2400 Engine Turning Rosette with a 4" rubber, a 24 bump pumping rosette with a 1-1/8" rubber or an 18 bump pumping rosette with a 2" rubber. The pattern is more stretched with 3 repetitions. **Do not cut on step "0".**

Phasing					Indexing		Phasing					Indexing	
Step	Rotation		Turns		Index		Step	Rotation		Turns		Index	
0	0	X	0	X	0	X	37	CCW		0		185	
1	CW		2		5		38	CCW		1/4		190	
2	CW		2		10		39	CCW		1/2		195	
3	CW		1-3/4		15		40	CCW		3/4		200	
4	CW		1-3/4		20		41	CCW		1		205	
5	CW		1-1/2		25		42	CCW		1-1/4		210	
6	CW		1-1/2		30		43	CCW		1-1/2		215	
7	CW		1-1/4		35		44	CCW		1-1/2		220	
8	CW		1		40		45	CCW		1-3/4		225	
9	CW		3/4		45		46	CCW		1-3/4		230	
10	CW		1/2		50		47	CCW		2		235	
11	CW		1/4		55		48	CCW		2		240	
12	CW		0		60		49	CW		2		245	
13	CCW		0		65		50	CW		2		250	
14	CCW		1/4		70		51	CW		1-3/4		255	
15	CCW		1/2		75		52	CW		1-3/4		260	
16	CCW		3/4		80		53	CW		1-1/2		265	
17	CCW		1		85		54	CW		1-1/2		270	
18	CCW		1-1/4		90		55	CW		1-1/4		275	
19	CCW		1-1/2		95		56	CW		1		280	
20	CCW		1-1/2		100		57	CW		3/4		285	
21	CCW		1-3/4		105		58	CW		1/2		290	
22	CCW		1-3/4		110		59	CW		1/4		295	
23	CCW		2		115		60	CW		0		300	
24	CCW		2		120		61	CCW		0		305	
25	CW		2		125		62	CCW		1/4		310	
26	CW		2		130		63	CCW		1/2		315	
27	CW		1-3/4		135		64	CCW		3/4		320	
28	CW		1-3/4		140		65	CCW		1		325	
29	CW		1-1/2		145		66	CCW		1-1/4		330	
30	CW		1-1/2		150		67	CCW		1-1/2		335	
31	CW		1-1/4		155		68	CCW		1-1/2		340	
32	CW		1		160		69	CCW		1-3/4		345	
33	CW		3/4		165		70	CCW		1-3/4		350	
34	CW		1/2		170		71	CCW		2		355	
35	CW		1/4		175		72	CCW		2		360	
36	CW		0		180		Checked everything in order? You now have a perfect pen tube						



Drape, 4 Repetitions pattern checklist

Use the 2400 Engine Turning Rosette with a 4" rubber, a 24 bump pumping rosette with a 1-1/8" rubber or an 18 bump pumping rosette with a 2" rubber. As opposed to the 3 repetitions, this pattern has fewer cuts on the lower phasing side altering the effects slightly. **Do not cut on step "0"**.

Phasing					Indexing		Phasing					Indexing	
Step	Rotation	X	Turns		Index	X	Step	Rotation		Turns		Index	
0	0	X	0		0	X	37	CW		2		185	
1	CW		2		5		38	CW		2		190	
2	CW		2		10		39	CW		1-3/4		195	
3	CW		1-3/4		15		40	CW		1-3/4		200	
4	CW		1-3/4		20		41	CW		1-1/2		205	
5	CW		1-1/2		25		42	CW		1-1/2		210	
6	CW		1-1/2		30		43	CW		1-1/4		215	
7	CW		1-1/4		35		44	CW		1		220	
8	CW		1		40		45	CW		1/2		225	
9	CW		1/2		45		46	CCW		0		230	
10	CCW		0		50		47	CCW		1/2		235	
11	CCW		1/2		55		48	CCW		1		240	
12	CCW		1		60		49	CCW		1-1/4		245	
13	CCW		1-1/4		65		50	CCW		1-1/2		250	
14	CCW		1-1/2		70		51	CCW		1-3/4		255	
15	CCW		1-3/4		75		52	CCW		1-3/4		260	
16	CCW		1-3/4		80		53	CCW		2		265	
17	CCW		2		85		54	CCW		2		270	
18	CCW		2		90		55	CW		2		275	
19	CW		2		95		56	CW		2		280	
20	CW		2		100		57	CW		1-3/4		285	
21	CW		1-3/4		105		58	CW		1-3/4		290	
22	CW		1-3/4		110		59	CW		1-1/2		295	
23	CW		1-1/2		115		60	CW		1-1/4		300	
24	CW		1-1/4		120		61	CW		1		305	
25	CW		1		125		62	CW		1/2		310	
26	CW		1/2		130		63	CW		0		315	
27	CW		0		135		64	CCW		1/2		320	
28	CCW		1/2		140		65	CCW		1		325	
29	CCW		1		145		66	CCW		1-1/4		330	
30	CCW		1-1/4		150		67	CCW		1-1/2		335	
31	CCW		1-1/2		155		68	CCW		1-1/2		340	
32	CCW		1-1/2		160		69	CCW		1-3/4		345	
33	CCW		1-3/4		165		70	CCW		1-3/4		350	
34	CCW		1-3/4		170		71	CCW		2		355	
35	CCW		2		175		72	CCW		2		360	
36	CCW		2		180		Checked everything in order? You now have a perfect pen tube						



Moiré: Option pattern checklist

Use the 2400 Engine Turning Rosette with a 4" rubber. This method flattens out the curve a bit. A 24 bump pumping rosette with a 1-1/8" rubber or an 18 bump pumping rosette with a 2" rubber will work giving a different appearance in each case. **Do not cut on step "0"**.

Phasing				Indexing		Phasing				Indexing			
Step	Rotation	X	Turns	X	Index	Step	Rotation	Turns	Index	Step	Rotation	Turns	Index
0	0	X	0	X	0	37	CCW	0	185	38	CCW	1/4	190
1	CW		0		5	39	CCW	1/2	195	40	CCW	3/4	200
2	CW		1/4		10	41	CCW	1	205	42	CCW	1-1/4	210
3	CW		1/2		15	43	CCW	1-1/2	215	44	CCW	1-1/4	220
4	CW		3/4		20	45	CCW	1	225	46	CCW	3/4	230
5	CW		1		25	47	CCW	1/2	235	48	CCW	1/4	240
6	CW		1-1/4		30	49	CW	0	245	50	CW	1/4	250
7	CW		1-1/2		35	51	CW	1/2	255	52	CW	3/4	260
8	CW		1-1/4		40	53	CW	1	265	54	CW	1-1/4	270
9	CW		1		45	55	CW	1-1/2	275	56	CW	1-1/4	280
10	CW		3/4		50	57	CW	1	285	58	CW	3/4	290
11	CW		1/2		55	59	CW	1/2	295	60	CW	1/4	300
12	CW		1/4		60	61	CCW	0	305	62	CCW	1/4	310
13	CCW		0		65	63	CCW	1/2	315	64	CCW	3/4	320
14	CCW		1/4		70	65	CCW	1	325	66	CCW	1-1/4	330
15	CCW		1/2		75	67	CCW	1-1/2	335	68	CCW	1-1/4	340
16	CCW		3/4		80	69	CCW	1	345	70	CCW	3/4	350
17	CCW		1		85	71	CCW	1/2	355	72	CCW	1/4	360
18	CCW		1-1/4		90								
19	CCW		1-1/2		95								
20	CCW		1-1/4		100								
21	CCW		1		105								
22	CCW		3/4		110								
23	CCW		1/2		115								
24	CCW		1/4		120								
25	CW		0		125								
26	CW		1/4		130								
27	CW		1/2		135								
28	CW		3/4		140								
29	CW		1		145								
30	CW		1-1/4		150								
31	CW		1-1/2		155								
32	CW		1-1/4		160								
33	CW		1		165								
34	CW		3/4		170								
35	CW		1/2		175								
36	CW		1/4		180								

Checked everything in order? You now have a perfect pen tube



Moiré pattern checklist

Use a 24 bump pumping rosette with a 1-1/8" rubber, an 18 bump pumping rosette with a 2" rubber or the 2400 Engine Turning Rosette with a 4" rubber. Picture is Moiré made with the 24 pumping rosette. **Do not cut on step "0".**

Phasing				Indexing		Phasing				Indexing			
Step	Rotation	X	Turns	X	Index	Step	Rotation	Turns	Index	Step	Rotation	Turns	Index
0	0	X	0	X	0	X	37	CCW	1/4	185			
1	CW		1/4		5		38	CCW	1/2	190			
2	CW		1/2		10		39	CCW	3/4	195			
3	CW		3/4		15		40	CCW	1	200			
4	CW		1		20		41	CCW	1-1/4	205			
5	CW		1-1/4		25		42	CCW	1-1/2	210			
6	CW		1-1/2		30		43	CCW	1-1/2	215			
7	CW		1-1/2		35		44	CCW	1-1/4	220			
8	CW		1-1/4		40		45	CCW	1	225			
9	CW		1		45		46	CCW	3/4	230			
10	CW		3/4		50		47	CCW	1/2	235			
11	CW		1/2		55		48	CCW	1/4	240			
12	CW		1/4		60		49	CW	1/4	245			
13	CCW		1/4		65		50	CW	1/2	250			
14	CCW		1/2		70		51	CW	3/4	255			
15	CCW		3/4		75		52	CW	1	260			
16	CCW		1		80		53	CW	1-1/4	265			
17	CCW		1-1/4		85		54	CW	1-1/2	270			
18	CCW		1-1/2		90		55	CW	1-1/2	275			
19	CCW		1-1/2		95		56	CW	1-1/4	280			
20	CCW		1-1/4		100		57	CW	1	285			
21	CCW		1		105		58	CW	3/4	290			
22	CCW		3/4		110		59	CW	1/2	295			
23	CCW		1/2		115		60	CW	1/4	300			
24	CCW		1/4		120		61	CCW	1/4	305			
25	CW		1/4		125		62	CCW	1/2	310			
26	CW		1/2		130		63	CCW	3/4	315			
27	CW		3/4		135		64	CCW	1	320			
28	CW		1		140		65	CCW	1-1/4	325			
29	CW		1-1/4		145		66	CCW	1-1/2	330			
30	CW		1-1/2		150		67	CCW	1-1/2	335			
31	CW		1-1/2		155		68	CCW	1-1/4	340			
32	CW		1-1/4		160		69	CCW	1	345			
33	CW		1		165		70	CCW	3/4	350			
34	CW		3/4		170		71	CCW	1/2	355			
35	CW		1/2		175		72	CCW	1/4	360			
36	CW		1/4		180								

Checked everything in order? You now have a perfect pen tube



Spiral pattern checklist

Use the 2400 Engine Turning Rosette with a 4" rubber or a 24 bump pumping rosette using the OD with a 1-1/8" rubber. Any rubber used should render a sine wave pattern.

Phasing				Indexing		Phasing				Indexing	
Step	Rotation		Turns	Index		Step	Rotation		Turns	Index	
1	CW		0	0		19	CW		1-1/4	180	
2	CW		1-1/4	10		20	CW		1-1/4	190	
3	CW		1-1/4	20		21	CW		1-1/4	200	
4	CW		1-1/4	30		22	CW		1-1/4	210	
5	CW		1-1/4	40		23	CW		1-1/4	220	
6	CW		1-1/4	50		24	CW		1-1/4	230	
7	CW		1-1/4	60		25	CW		1-1/4	240	
8	CW		1-1/4	70		26	CW		1-1/4	250	
9	CW		1-1/4	80		27	CW		1-1/4	260	
10	CW		1-1/4	90		28	CW		1-1/4	270	
11	CW		1-1/4	100		29	CW		1-1/4	280	
12	CW		1-1/4	110		30	CW		1-1/4	290	
13	CW		1-1/4	120		31	CW		1-1/4	300	
14	CW		1-1/4	130		32	CW		1-1/4	310	
15	CW		1-1/4	140		33	CW		1-1/4	320	
16	CW		1-1/4	150		34	CW		1-1/4	330	
17	CW		1-1/4	160		35	CW		1-1/4	340	
18	CW		1-1/4	170		36	CW		1-1/4	350	

The list above has clockwise phasing and will create a right hand spiral. To create a left hand spiral phase counterclockwise. A finer spiral pattern can be cut by indexing 5° instead of 10°. If the 1-1/4 turn of phasing (2-1/2°) is retained, the spiral will have a much steeper pitch. These settings are the preferred setting for the spiral created with the 2400 ET rosette. An 18 bump pumping rosette should use a 10° index and a 5° (2-1/2 turns) phasing.