



ADVANCED GRID MAKER

Pineapple Knots

How to use Advanced Grid Maker by Freakin' Sweet Knots to create instructions and size estimates for Pineapple Knots (PK).

[Advanced Grid Maker](#)

(Chrome and Firefox)

[Freakin' Sweet Apps Web Site](#) | [Freakin' Sweet Knots FB](#) | [KnotFly Google +](#)

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Quick Start

I love AGM - it's a bit wonky like me. When defining a knot, sequence can matter. The table below and the rest of this guide are presented in the sequence that has worked for me.

1	Recipe	Use Advanced Grid Maker: Pineapple Knot Recipes to locate the AVG settings for the knot to be tied
2	Column Coding	Enter the appropriate OU pattern and click the COLUMN CODING button
3	Colors	One HTML color name per strand, space separated Most standard names work - red yellow green purple ... Change SHADOW COLOR to white
4	Strand Gap Size	If using the default STRAND WIDTH, the set GAP SIZE to 0.05"
5	Pineapple Grid	Enter the number of NESTED BIGHTS and SHIFTED BIGHTS and click the PINEAPPLE GRID button
6	Rows & Columns	Resize the pattern image so that the number of ROWS and COLUMNS matches the recipe
7	Turns	Check the CONSOLIDATE OVERS AND UNDERS box to see if the knot has turns

- Select the correct sheet for the number of strands
- Use Column A to filter for the number of bight nests



File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

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	A	B	C	D	E	F	G	H	I
1	Bight Nests	Strands	Rows	Column	Parts	Bights	Column Coding	Nested	Shifted
4	3	3	24	18	19	9	UUUUUU	3	1
5	3	3	26	18	21	9	UUUUUU	3	1
6	3	3	38	18	33	9	UUUUUU	3	1
7	3	3	40	18	35	9	UUUUUU	3	1
8	3	3	44	18	39	9	UUUUUU	3	1
9	3	3	56	18	51	9	UUUUUU	3	1
10	3	3	58	18	53	9	UUUUUU	3	1
11	3	3	60	18	55	9	UUUUUU	3	1
12	3	3	62	18	57	9	UUUUUU	3	1
13	4	3	14	24	9	12	UUUUUU	3	1
14	4	3	16	24	11	12	UUUUUU	3	1
15	4	3	18	24	13	12	UUUUUU	3	1
16	4	3	20	24	15	12	UUUUUU	3	1
17	4	3	22	24	17	12	UUUUUU	3	1
18	4	3	24	24	19	12	UUUUUU	3	1
19	4	3	26	24	21	12	UUUUUU	3	1
20	4	3	28	24	23	12	UUUUUU	3	1
21	4	3	30	24	25	12	UUUUUU	3	1
22	4	3	32	24	27	12	UUUUUU	3	1
23	4	3	34	24	29	12	UUUUUU	3	1
24	4	3	36	24	31	12	UUUUUU	3	1
25	4	3	38	24	33	12	UUUUUU	3	1
26	4	3	40	24	35	12	UUUUUU	3	1
27	4	3	42	24	37	12	UUUUUU	3	1
28	4	3	44	24	39	12	UUUUUU	3	1
29	4	3	46	24	41	12	UUUUUU	3	1
30	4	3	48	24	43	12	UUUUUU	3	1
31	4	3	50	24	45	12	UUUUUU	3	1

+ Intro 2 Strands 3 Strands 4 Strands

Column Coding

To use Grid Maker for PKs, you must enter a pattern of "O"vers and "U"nders to use and then click the COLUMN CODING button. For PKs, the OU pattern is determined by the number of strands being used.

- 1 O and 1 U for each strand
- Use capital letters for the OU pattern
- Click the COLUMN CODING button to apply changes to the OU pattern

	OU Pattern
2 Strands	O U U O
3 Strands	O U U U O O
4 Strands	O U U U U O O O

Stretch Resize

Row Coding Column Coding **OUUUOO**

Tile Coding 4 O U

Locked Gaucho Coding 2 O

Dog Bone Coding Rows 7 Top Coding OU

Colors black orange purple

Shadow Colors white

Strand Width: 0.1250 inches 0.3175 cm

Strand Gap Size: 0.0500 inches 0.1270 cm

DPI: 300

Display Scale: 0.3

Parts: 13

Bights: 9

Colors

Each strand must have a corresponding COLOR using [HTML color names](#).

- Most common names work - red, yellow, green, purple, black, gray, white ...
- Separate each color with a space
- The same color can be used multiple times
- Example: A 3 strand knot might use these colors - black white gray

Adjusting the SHADOW COLOR can make the pattern image easier to see - white is often good.

Stretch		Resize	
Row Coding	Column Coding	OUUUOO	
Tile Coding	4	O	U
Locked Gaucho Coding	2	O	
Dog Bone Coding	Rows 7	Top Coding	OU
Colors	black orange purple		
Shadow Colors	white		
Strand Width:	0.1250	inches 0.3175	cm
Strand Gap Size:	0.0500	inches 0.1270	cm
DPI:	300		
Display Scale:	0.3		
Parts:	13		
Bights:	9		

Grid Maker helps you see how changing the color order affects the knot's appearance. Here is the same Type I PK using black, orange, and purple in different orders:



Strand Width and Gap Size

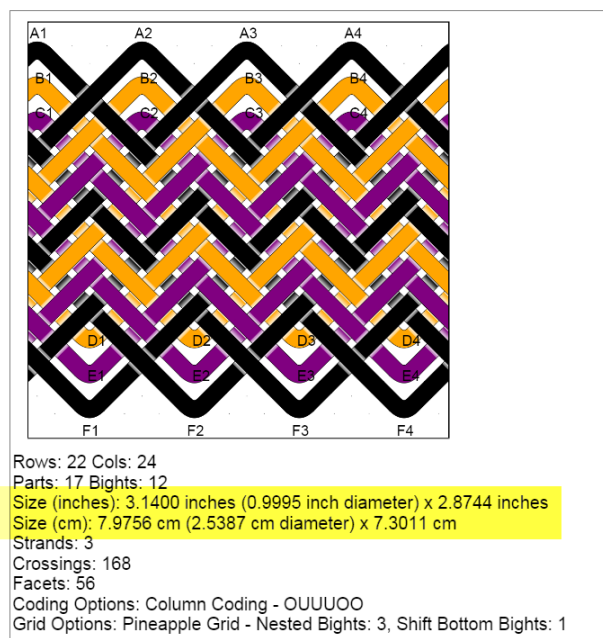
Grid Maker uses STRAND WIDTH to estimate the length of cord needed and the dimensions of the finished knot. If you aren't interested in these estimates, you can use the default value of 0.1250".

- Type III 550 with 7 inner cores = 5mm or 0.1563"
- [Convert Fractions to Decimals and MM](#)

Depending on STRAND WIDTH and number of strands, you may need to adjust the STRAND GAP SIZE to make the pattern image display correctly.

- For PKs, if you use the default STRAND WIDTH, then change the GAP SIZE to 0.05".

Stretch		Resize	
Row Coding	Column Coding OUUUOO		
Tile Coding	4	O	U
Locked Gaucho Coding	2	O	
Dog Bone Coding	Rows 7	Top Coding	OU
Colors	black orange purple		
Shadow Colors	white		
Strand Width:	0.1250	inches 0.3175	cm
Strand Gap Size:	0.0500	inches 0.1270	cm
DPI:	300		
Display Scale:	0.3		
Parts:	13		
Bights:	9		



Nested & Shifted Bights

To create a PK, you must define the number of NESTED BIGHTS and SHIFT BOTTOM BIGHTS, and then click the PINEAPPLE GRID button. These values can be found in the Recipes resource.

NESTED BIGHTS = Strands / Colors (not to be confused with BIGHT NESTS explained above)

Strands (B)	Nested Bights (H)	Shifted Bights (I)
2	2	1
3	3	1
4	4	2

Autofill Grid Options:

☒ Autofill Grid

Standard Grid Mat Grid Round Braid Grid

Pineapple Plant Hanger Grid Bottom Pineapple Grid **Pineapple Grid** Nested Bights Shift Bottom Bights

Hansen Grid Shift Bottom Bights

Dog Bone Grid Nested Bights Shift Bottom Bights Rows

Rows & Columns

To complete the knot, click and drag the lower right corner of the pattern image until the number of ROWS and COLUMNS match the Recipe (columns C and D).

- Notice the number of PARTS and BIGHTS will automatically adjust to match the recipe.
- Pay attention to COLUMNS - a given number of ROWS will have several column values.



Instructions / Run List

Grid Maker has two ways of displaying INSTRUCTIONS - a.k.a. run lists. Use the CONSOLIDATED OVERS AND UNDERS checkbox to toggle these displays.

View As Image

☐ Do every other strand

☒ Consolidate overs and unders

☐ Do half way

☒ Label pins with letters

☒ Prefer Down Right Strands

Start Corner: Top Left

Start Direction: Down Right

Strand Lengths:

Strand 1 (purple): 3 feet 0.1298 inches (91.7696 cm)

Strand 2 (black): 2 feet 1.8070 inches (65.5497 cm)

Strand 3 (orange): 2 feet 1.8070 inches (65.5497 cm)

Instructions:

Strand 1 (purple)		
From A1		to F4
From F4		to A4
From A4		to F3
From F3		to A3
From A3		to F2
From F2		to A2
From A2		to F1
From F1		to A1

View As Image

☐ Do every other strand

☒ Consolidate overs and unders

☐ Do half way

☒ Label pins with letters

☒ Prefer Down Right Strands

Start Corner: Top Left

Start Direction: Down Right

Strand Lengths:

Strand 1 (purple): 3 feet 0.1298 inches (91.7696 cm)

Strand 2 (black): 2 feet 1.8070 inches (65.5497 cm)

Strand 3 (orange): 2 feet 1.8070 inches (65.5497 cm)

Instructions:

Strand 1 (purple)		
From A1		to F4
From F4	01	to A4
From A4	01	to F3
From F3	U1 01U1	to A3
From A3	U1 01U1	to F2
From F2	U1 02U1 01	to A2
From A2	U1 02U1 01	to F1
From F1	U1 01U1 01U1 01	to A1

Turns

Longer knots require you to wrap the cord around the mandrel and pass the starting pin one or more times before reaching the next pin. This is called a “turn”. Check the CONSOLIDATED OVERS AND UNDERS box to see the number of turns for a knot.

☐ Do every other strand

☒ Consolidate overs and unders

☐ Do half way

☒ Label pins with letters

☒ Prefer Down Right Strands

 Start Corner: Top Left

 Start Direction: Down Right

Strand Lengths:

Strand 1 (lightgray): 1 feet 11.4787 inches (59.6359 cm)

Instructions:

Strand 1 (lightgray)

 From A1 around 2x to B2

 From B2 01U1 01U1 to A3

 From A3 U1 01U1 01 to B1

 From B1 02U2 02U2 01 to A2

 From A2 U2 02U2 02U1 to B3

 From B3 01U1 01U1 01U1 01U1 01U1 01U1 01 to A1



A1 to B2
No Turns



A1 to B2
1 Turn



A1 to B2
2 Turns

Pineapple Types

I spent several hours reading and watching video and still couldn't understand bight boundaries or how to identify the type of Pineapple I was looking at. Then John Allwine - the creator of Grid Maker - gave me a simple explanation and a few examples that I immediately understood.

A PK is an interweave of two or more Turks Heads. Type is the number of the largest TH in the knot - which is hard to visualize, but keep going ...

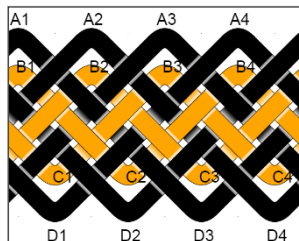
Broadly speaking, there are three kinds of PKs:

- First is the kind where one larger TH encompasses all of the other smaller THs in the PK. These are always Type I.
- Second is the kind where each of the TH are of equal size and "stacked". In this case, the Type = the number of strands or THs.
- Third is the kind where 2 or more large and equally sized THs are "stacked" and encompass the other smaller THs. In this case, Type = the number of the equally sized, large THs.

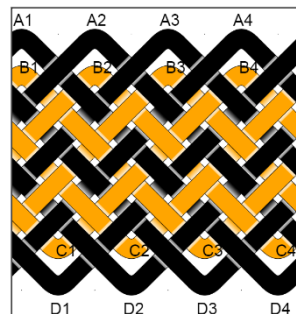
Example: 2 Strands

A 2 strand PK is either a Type I or a Type II.

Below are Type I - The ONE larger black TH encompasses the smaller orange TH.

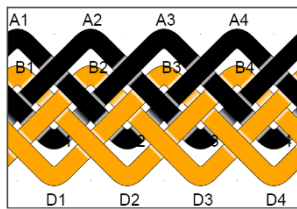


Rows: 11 Cols: 16
 Parts: 8 Bights: 8
 Size (inches): 1.9800 inches (0.6303 inch diameter) x 1.3644 inches
 Size (cm): 5.0292 cm (1.6008 cm diameter) x 3.4657 cm
 Strands: 2
 Crossings: 48
 Facets: 24
 Coding Options: Column Coding - OUUO
 Grid Options: Pineapple Grid - Nested Bights: 2, Shift Bottom Bights: 1

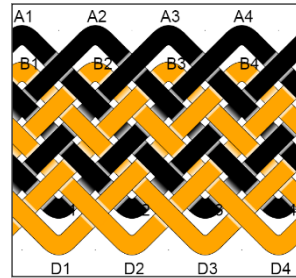


Rows: 15 Cols: 16
 Parts: 12 Bights: 8
 Size (inches): 1.9800 inches (0.6303 inch diameter) x 1.8578 inches
 Size (cm): 5.0292 cm (1.6008 cm diameter) x 4.7188 cm
 Strands: 2
 Crossings: 80
 Facets: 40
 Coding Options: Column Coding - OUUO
 Grid Options: Pineapple Grid - Nested Bights: 2, Shift Bottom Bights: 1

And these are Type II - TWO equally sized THs that are “stacked”.



Rows: 9 Cols: 16
 Parts: 6 Bights: 8
 Size (inches): 1.9800 inches (0.6303 inch diameter) x 1.1178 inches
 Size (cm): 5.0292 cm (1.6008 cm diameter) x 2.8392 cm
 Strands: 2
 Crossings: 32
 Facets: 16
 Coding Options: Column Coding - OUUO
 Grid Options: Pineapple Grid - Nested Bights: 2, Shift Bottom Bights: 1



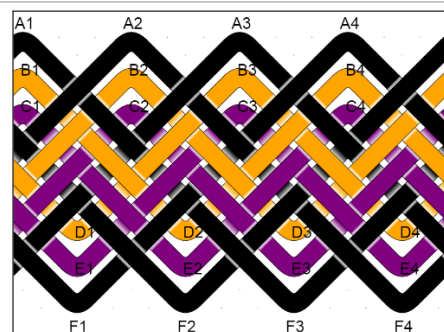
Rows: 13 Cols: 16
 Parts: 10 Bights: 8
 Size (inches): 1.9800 inches (0.6303 inch diameter) x 1.6111 inches
 Size (cm): 5.0292 cm (1.6008 cm diameter) x 4.0922 cm
 Strands: 2
 Crossings: 64
 Facets: 32
 Coding Options: Column Coding - OUUO
 Grid Options: Pineapple Grid - Nested Bights: 2, Shift Bottom Bights: 1

Example: 3 Strands

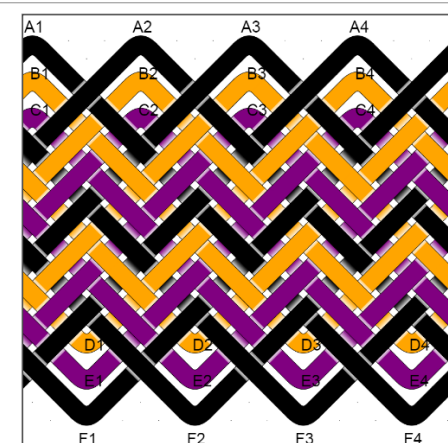
A 3 strand PK is either Type I, Type II, or Type III.

Below are Type I - The ONE large black TH encompasses the two smaller equally sized THs.

You know the orange and purple are equally sized because of how they’re “stacked” - if you took away the BLACK strand, you’d be left with a 2 strand Type II as shown in the previous section.



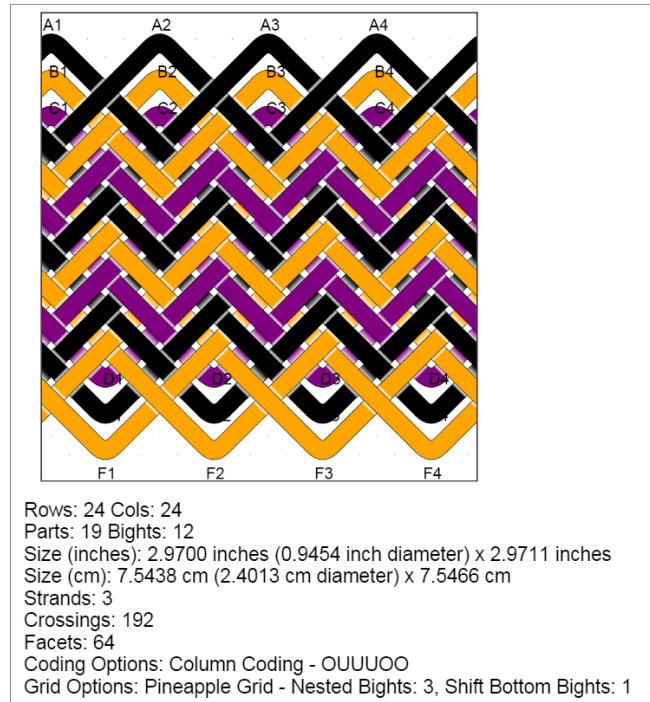
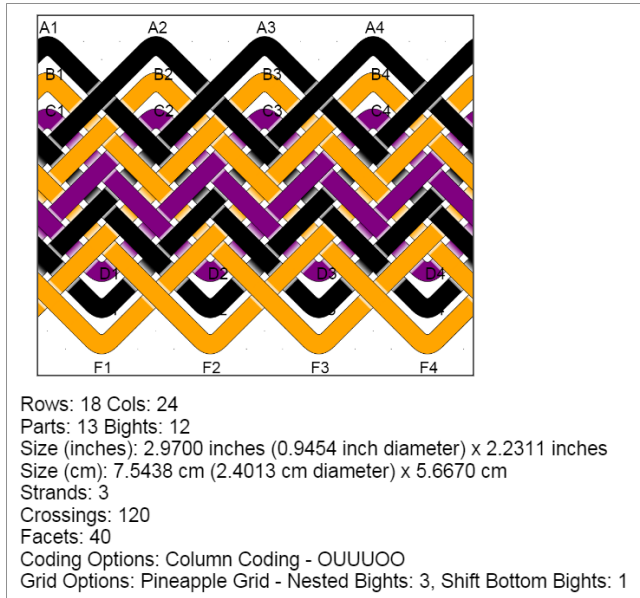
Rows: 16 Cols: 24
 Parts: 11 Bights: 12
 Size (inches): 2.9700 inches (0.9454 inch diameter) x 1.9844 inches
 Size (cm): 7.5438 cm (2.4013 cm diameter) x 5.0405 cm
 Strands: 3
 Crossings: 96
 Facets: 32
 Coding Options: Column Coding - OUUUOO
 Grid Options: Pineapple Grid - Nested Bights: 3, Shift Bottom Bights: 1



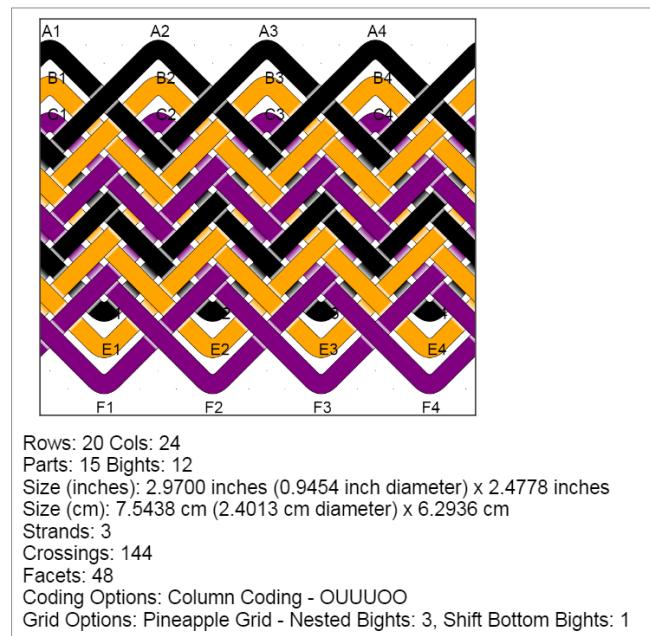
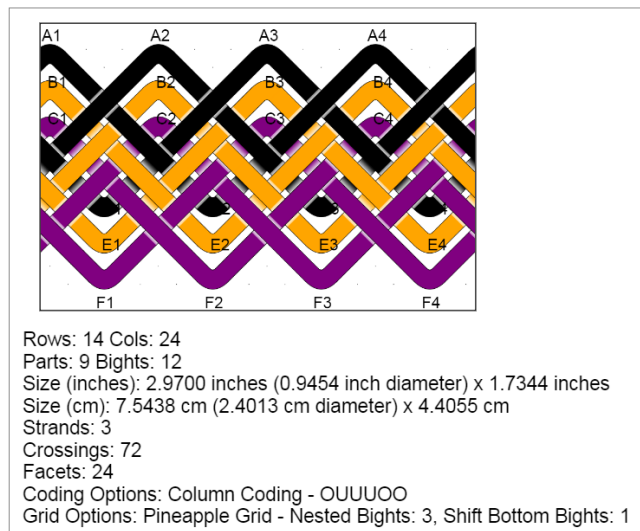
Rows: 22 Cols: 24
 Parts: 17 Bights: 12
 Size (inches): 2.9700 inches (0.9454 inch diameter) x 2.7244 inches
 Size (cm): 7.5438 cm (2.4013 cm diameter) x 6.9201 cm
 Strands: 3
 Crossings: 168
 Facets: 56
 Coding Options: Column Coding - OUUUOO
 Grid Options: Pineapple Grid - Nested Bights: 3, Shift Bottom Bights: 1

These are Type II - The black and orange are TWO larger, equally sized, “stacked” THs that encompass the smaller purple TH.

You know the black and orange are equally sized because of how they’re “stacked” - if you took away the PURPLE strand, you’d be left with a 2 strand Type II as shown in the previous section.



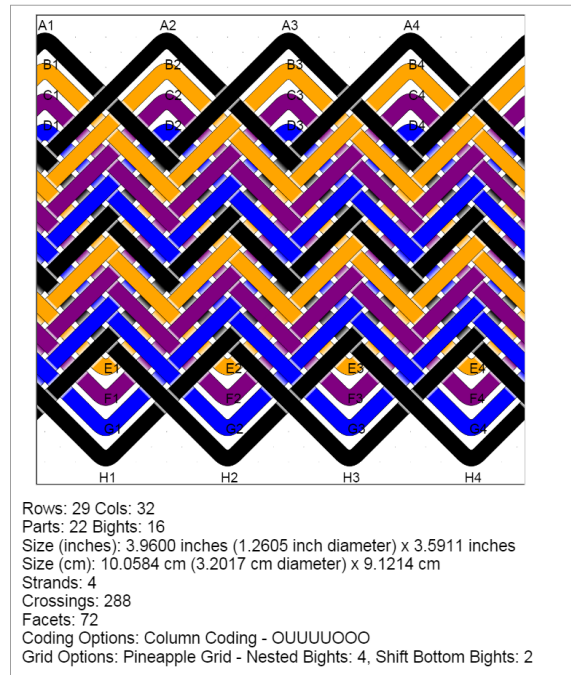
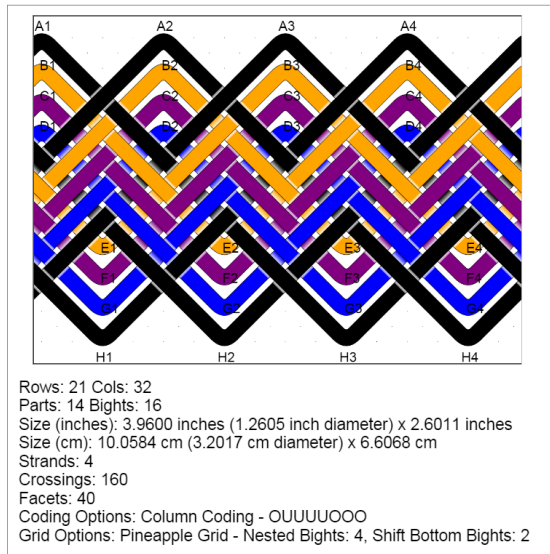
And these are Type III - THREE equally sized THs that are “stacked”.



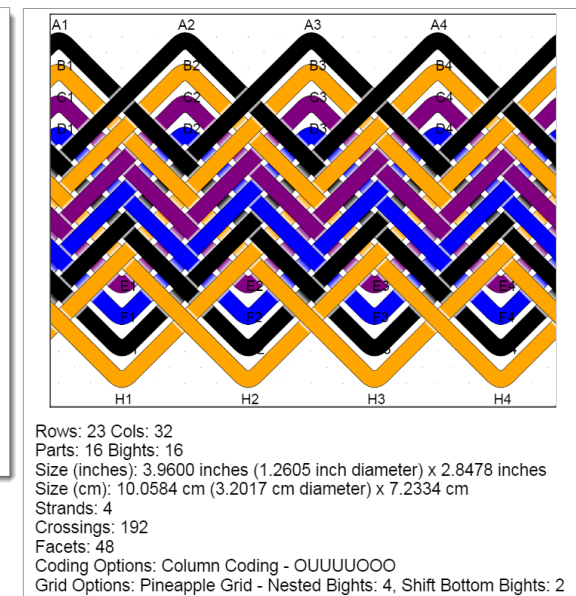
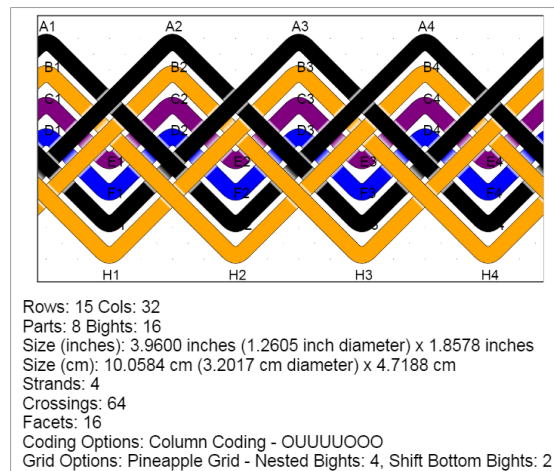
Example: 4 Strands

A 4 strand PK is either Type I, Type II, Type III, or Type IV.

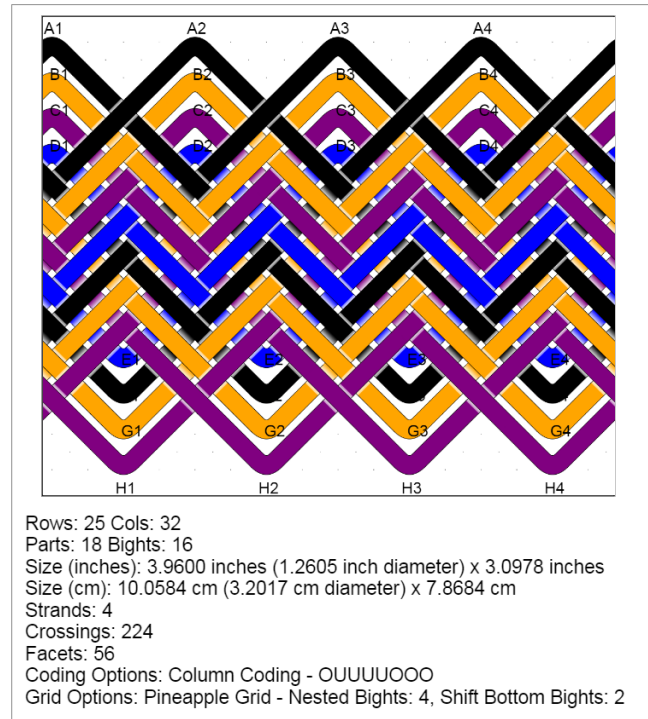
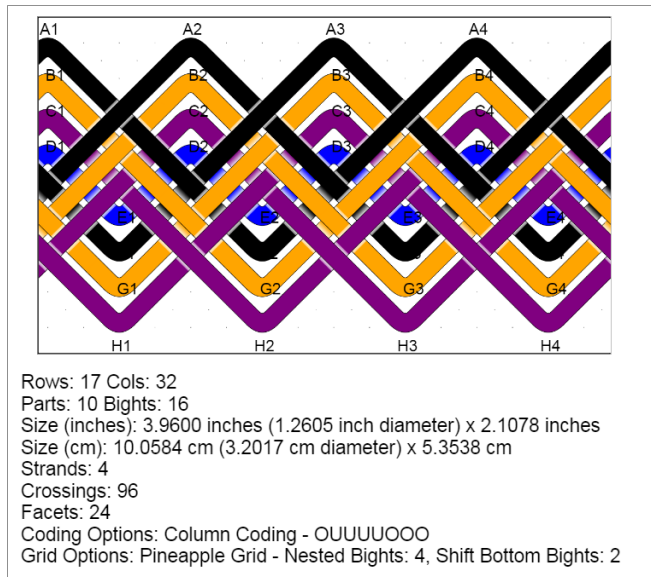
Below are Type I - The ONE large black TH encompasses three smaller, equally sized, “stacked” THs.



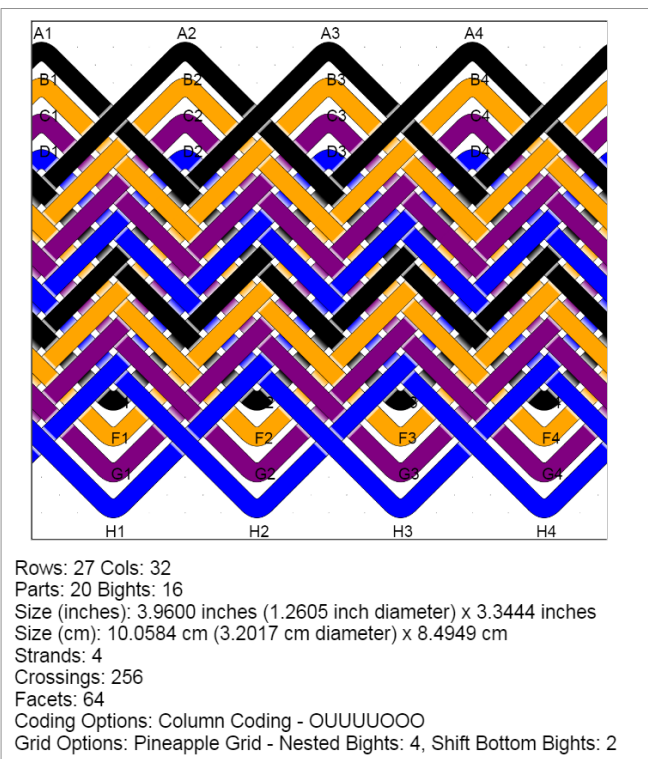
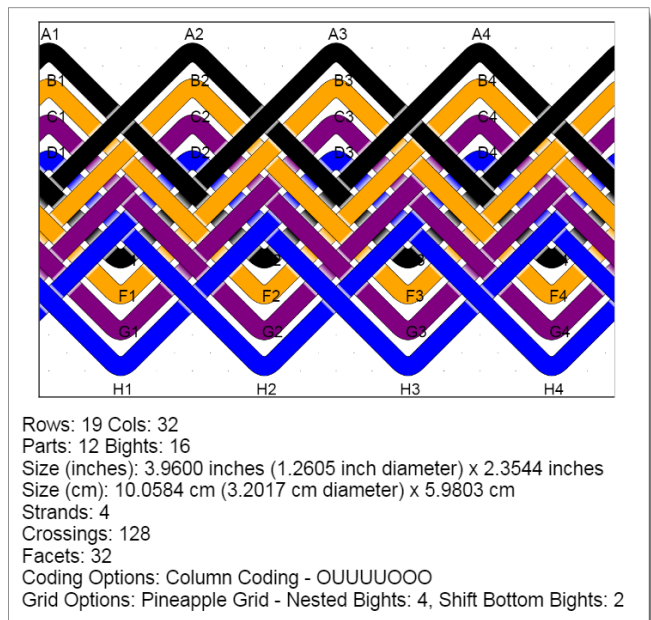
These are Type II - The black and orange are TWO larger, equally sized, stacked THs that encompass the two smaller purple and blue THs.



These are Type III - The black, orange, and purple are THREE larger, equally sized, “stacked” THs that encompass the smaller blue TH.



And these are Type IV - FOUR equally sized and stacked THs.



Examples Condensed

Here's another way of visualizing Types by looking at the order of top and bottom bights. The yellow bars show equally sized and stacked THs.

2 Strands	Type I	Type II		
				
				
3 Strands	Type I	Type II	Type III	
				
				
4 Strands	Type I	Type II	Type III	Type IV
				
				