TIPS ON ARIANE

(as of now the current release is Ariane V2.: see p 30 but the V1 tips were kept p1-p29)

What knots can be planed with ARIANE ?

AMONG OTHERS (see a few offered illustrations *Fig I* to *Fig V*):

IN AUTO mode :

*** PINEAPPLES (STANDARD HERRINGBONE-PINEAPPLE and NOT-HERRINGBONE PINEAPPLE).

*** STANDARD HERRINGBONE KNOTS

*** Other NESTED BIGHTS CYLINDRICAL KNOTS whether they are SYMMETRIC or ASYMMETRIC as long as they are ""**REGULAR**"". (See Page 23 and following for details about the notions of "REGULAR" and "IRREGULAR" that are used here in a special manner.)

IN MANUAL SETTING OF THE PINS :
(this manual setting is **not** made available in Version 1 nor in V2).

*** **OTHER** NESTED BIGHTS CYLINDRICAL KNOTS, in particular ""**IRREGULAR**"" ones.

Fig I **HERRINGBONE-PINEAPPLE -NESTED-BIGHTs- (with THK COMPONENTS - in 2 SETS- that are of ODD NUMBER of LEADS)**

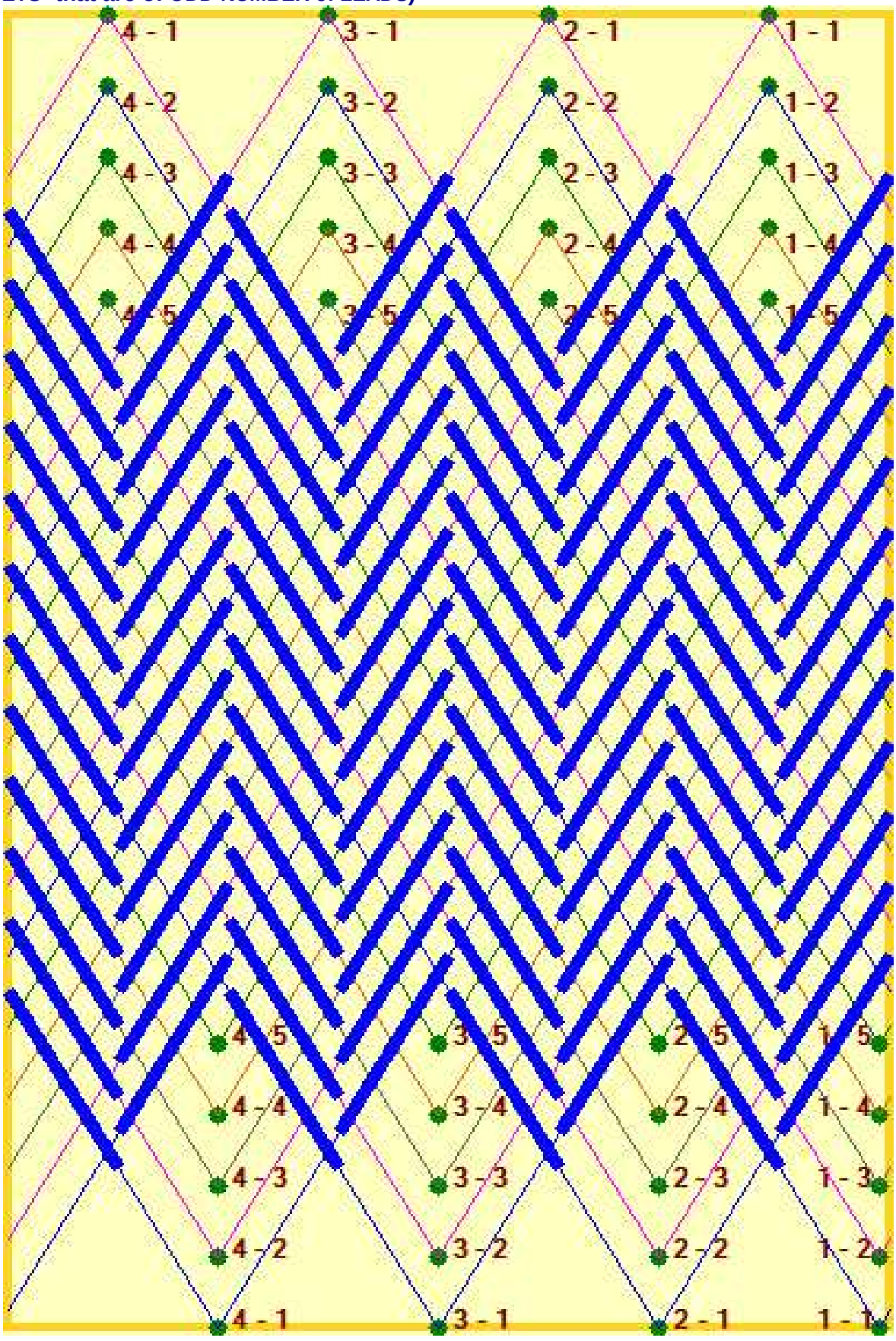


Fig II PINEAPPLE – so NESTED-BIGHTs- with THK COMPONENTS of EVEN NUMBER of LEADS (in TWO SETS)

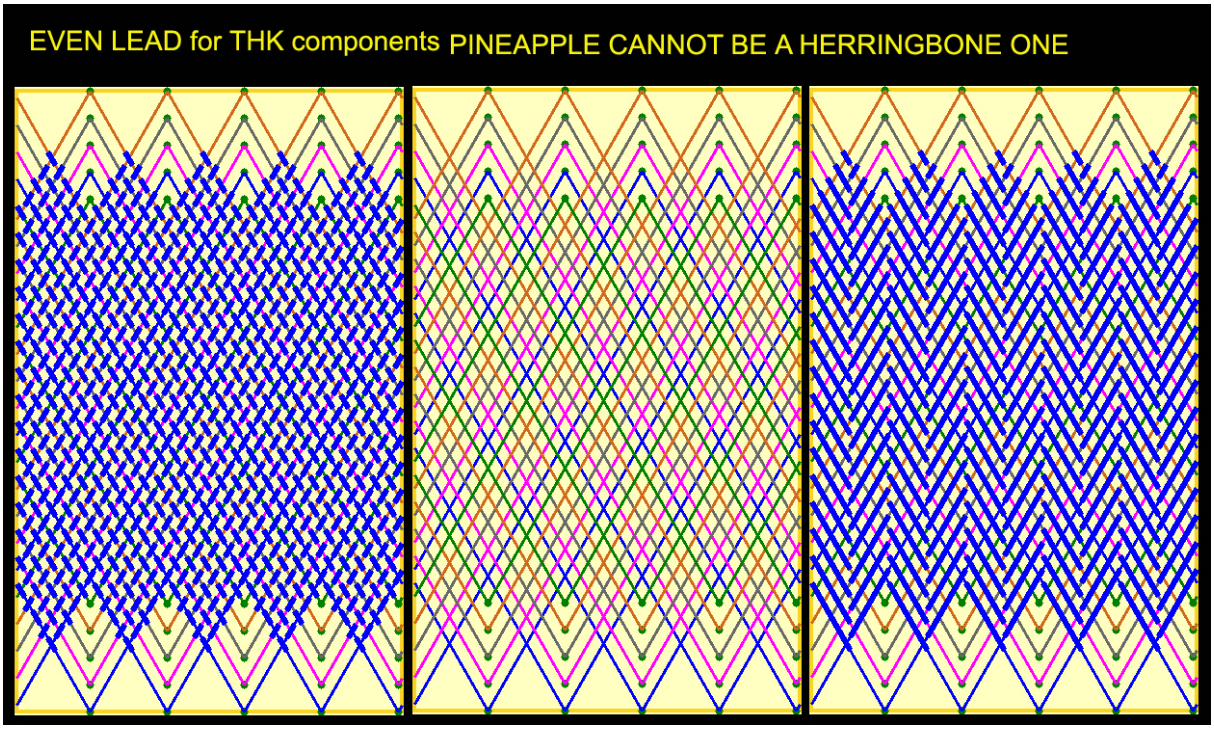


Fig III Standard HERRINGBONE KNOT – so NO NESTED-BIGHTs- (ODD NUMBER of LEADS in THK COMPONENTS)

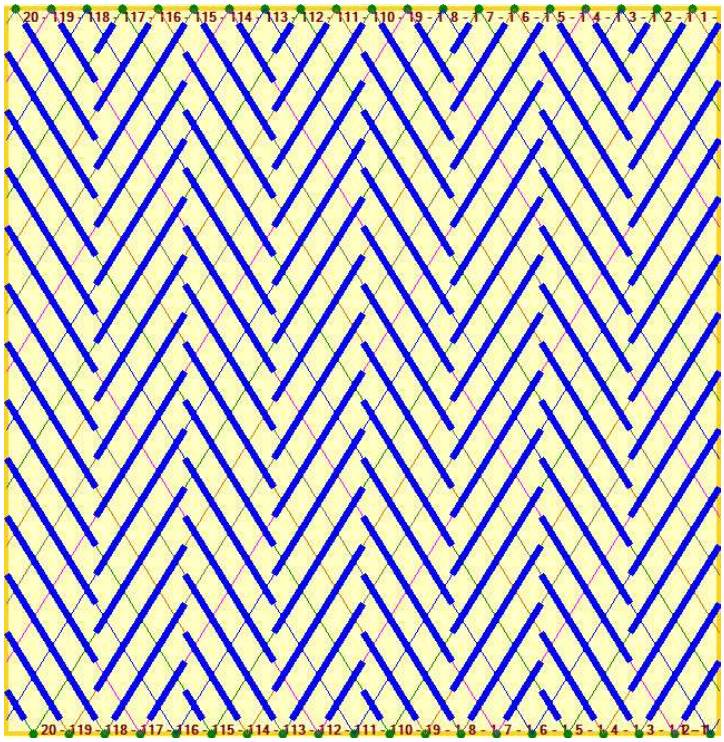


Fig IV Standard HERRINGBONE KNOT – so NO NESTED BIGHTs- (EVEN NUMBER of LEADS in THK COMPONENTS)

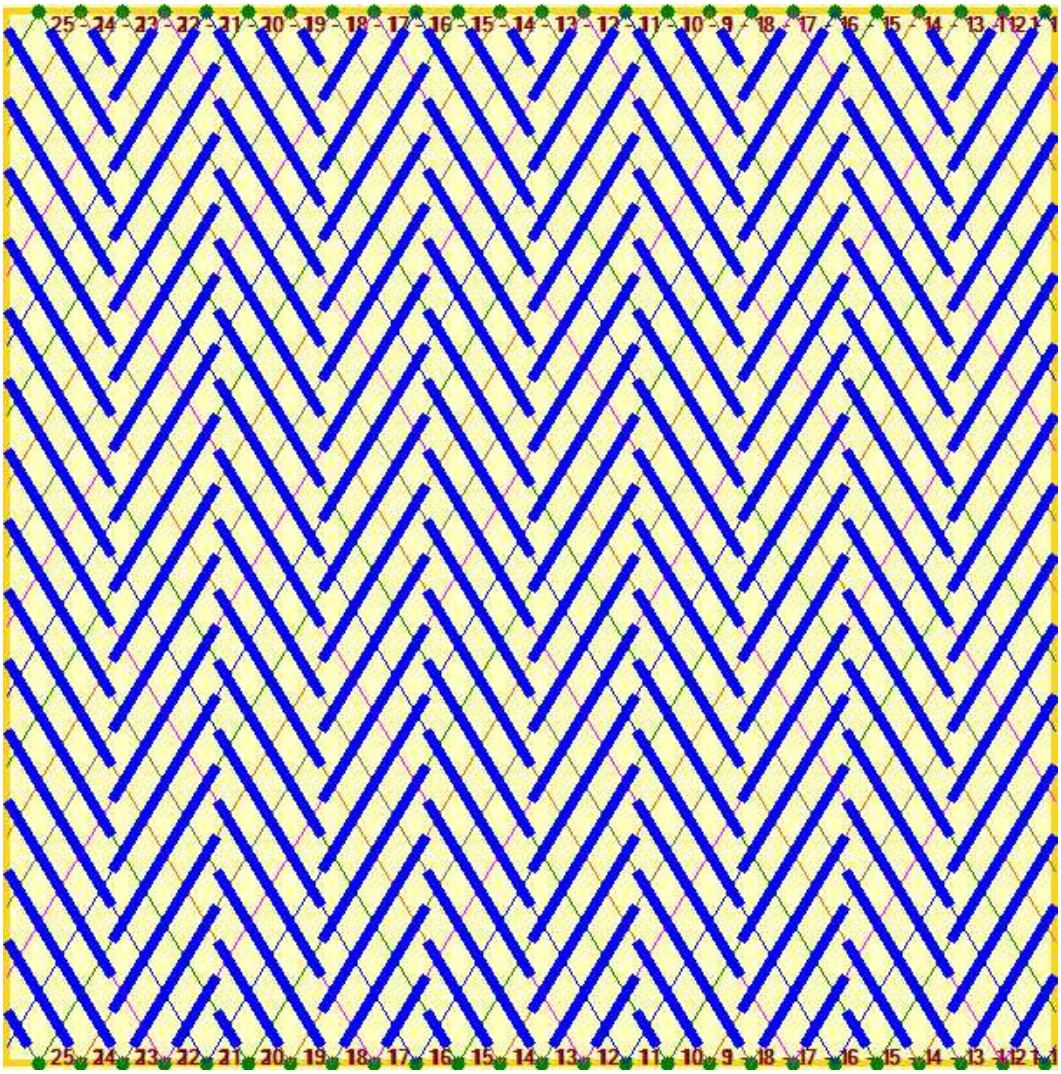
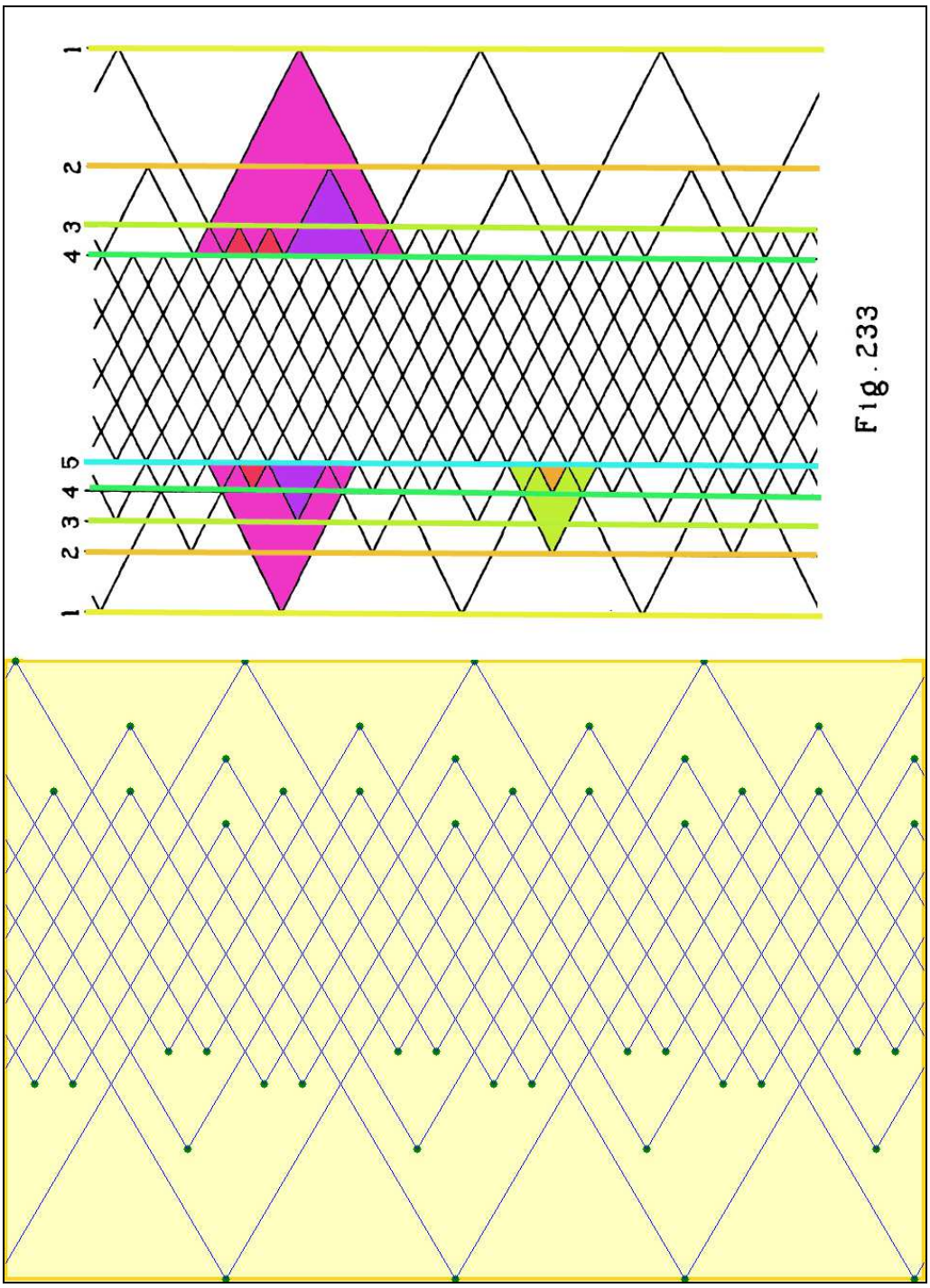
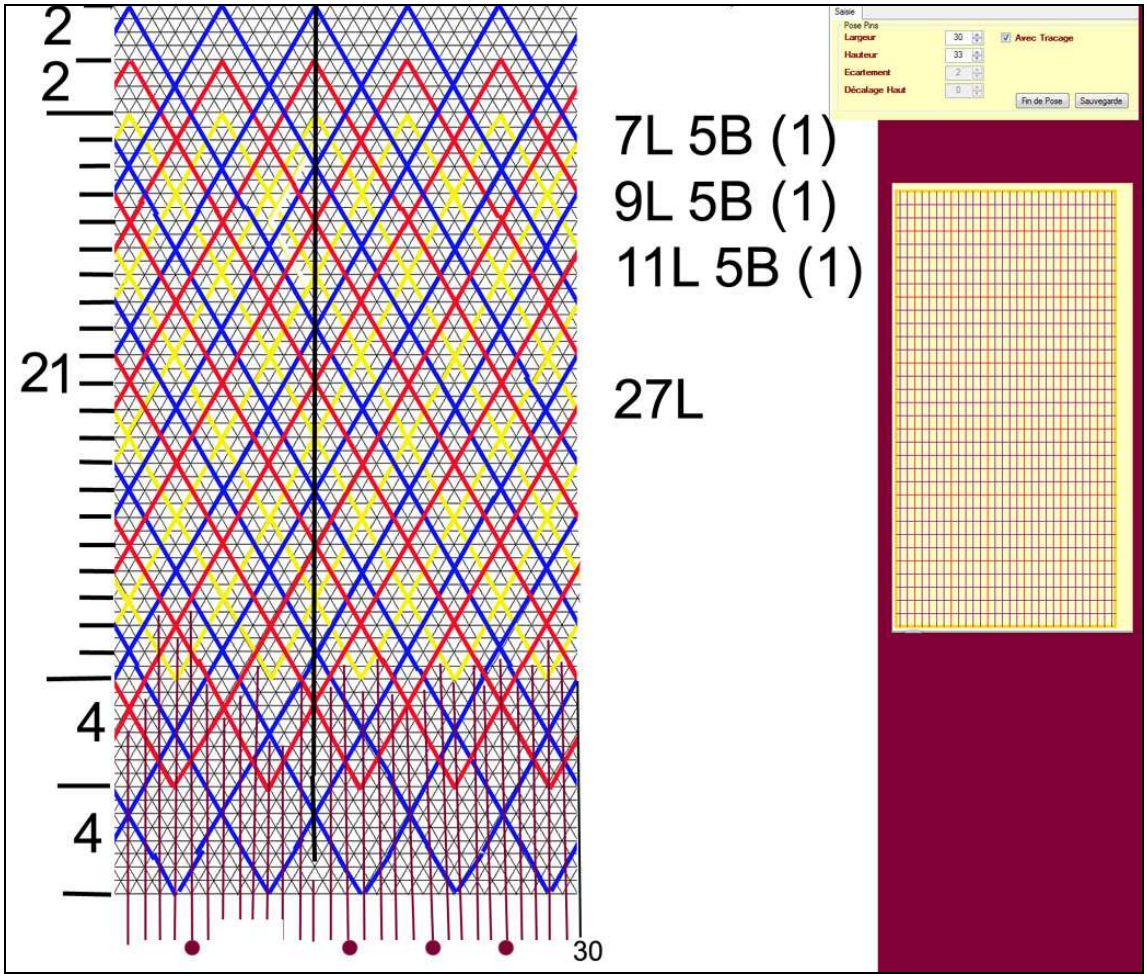


Fig V **an IRREGULAR NESTED BIGHTS CYLINDRICAL KNOT that needs a MANUAL POSITIONING of PINs . (– NOT made available in Version 1 nor in V2.)**



(note : it just happened that the lower illustration is rotated 180° relative to the upper illustration.)

Fig VI THK ASSEMBLIES.



You need to built a grid that has
WIDTH=30
and
HEIGHT=33
and then put on your PINs..

The units ?

CI= **COLUMN INTERVAL** for **WIDTH**
and **RI =ROW INTERVAL** for **HEIGHT**.

We will see later how to use the MANUAL POSITIONG of PINs. (just for the intellectual curiosity as this will only be publicly released with the V3)

ARIANE

Fig 1 full screen window.

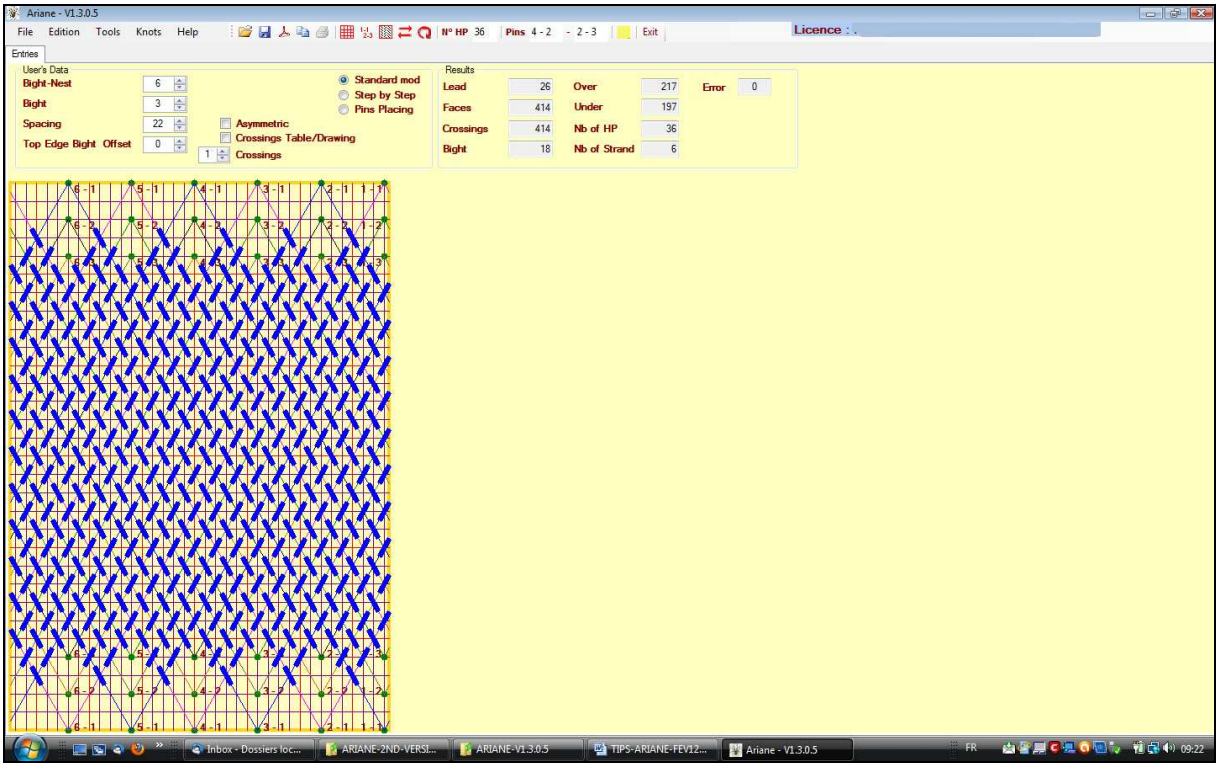
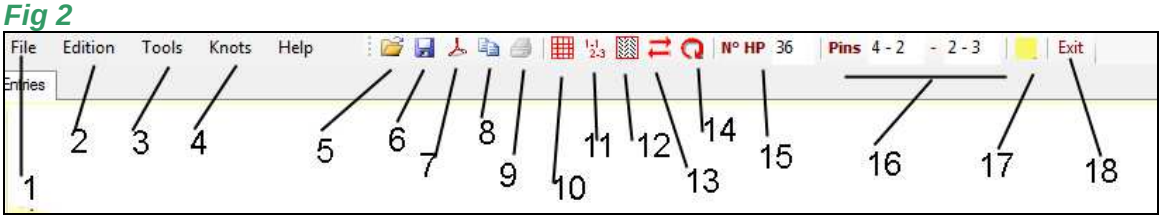


Fig 2



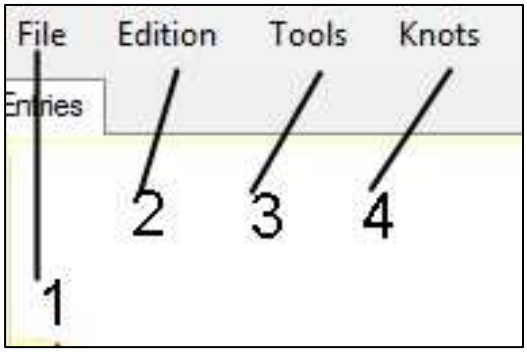


Fig 3

File two items : **Open** and **Quit**
Quit is self-explaining.

Open is used to open the file of a knot that was saved by user or sent to him. ARI files are a light, swift and powerful tool of exchange with others knots tyers.

Edition At the moment it is just an empty box.

Tools

Configuration :

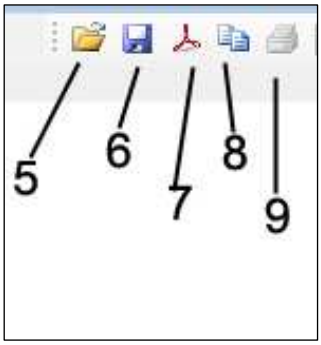
Fig 4

line == the thickness of the traced lines.

Font = the font size.

? Open « what is ***Ariane*** ».

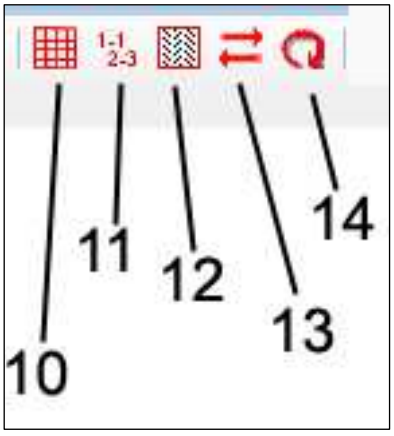
Fig 5



N°5 **Open** : Open the working directory.

N°6
Save in the designated working directory a file titled « **Ariane.txt** » which contains the knot's characteristics. (in V2 it is .ARI file format)

N°7
The **'instant tutorial'** : writes a .**PDF** file that contains the table of HP codes and the knot grid as it is on the screen. (see the Tutorial for a 96 FACEs spherical cover made by Claude using grid and the table of HP coding produced by ARIANE).



N°8 Makes a **copy** of the grid to the clip board.

N°9 **Print** may be this one will be suppressed.

Fig 6
N°10.
Traces the COLUMNS and ROWS LINES.

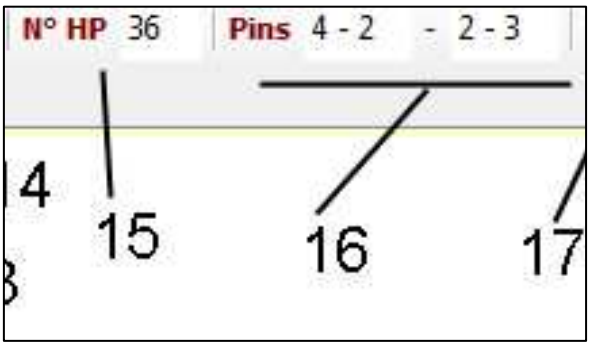
N°11 Shows (or not ; by inversion) the PINs notation.

N°12 Shows (or not ; by inversion of the situation) the crossings.

N°13
Inverts the crossings **U** for **O** and **O** for **U**

N°14
Changes the orientation of the traced grid : **PORTRAIT / LANDSCAPE or VERTICAL CYLINDER FRAME OF REFERENCE / HORIZONTAL MANDREL FRAME OFREFERENCE**

Fig 7

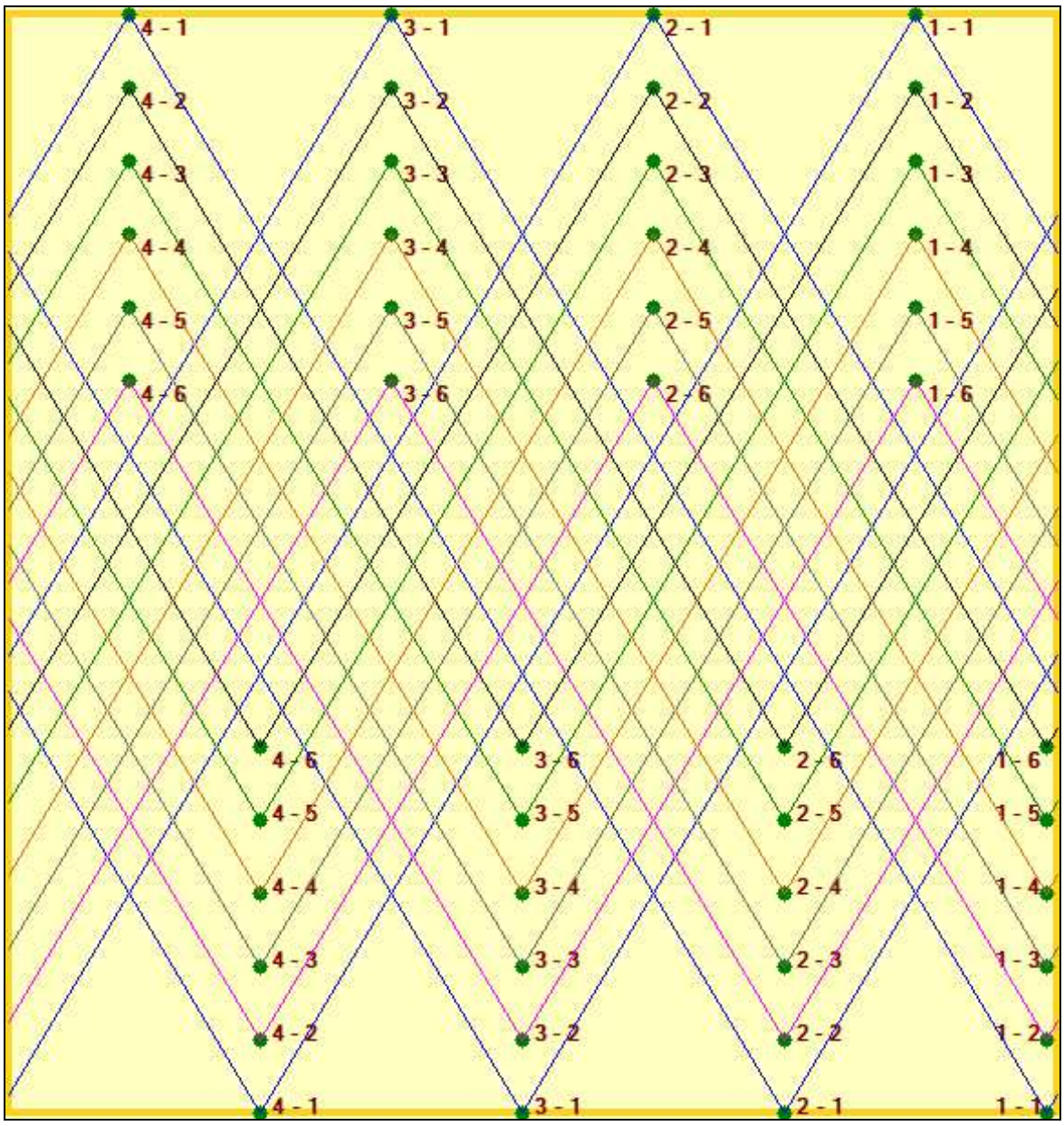


N°15

.
N°HP , Number of the HALF-PERIOD.

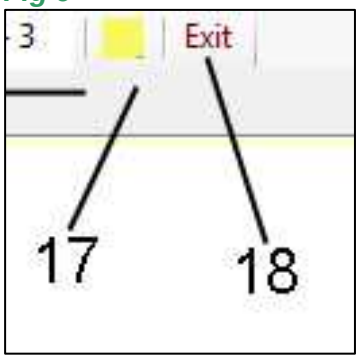
N°16
Start PIN and **Arrival** PIN for the HP.

Fig 8 the PINs notation.



4 - 6 means 4th PIN on the 6th BIGHT-RIM.

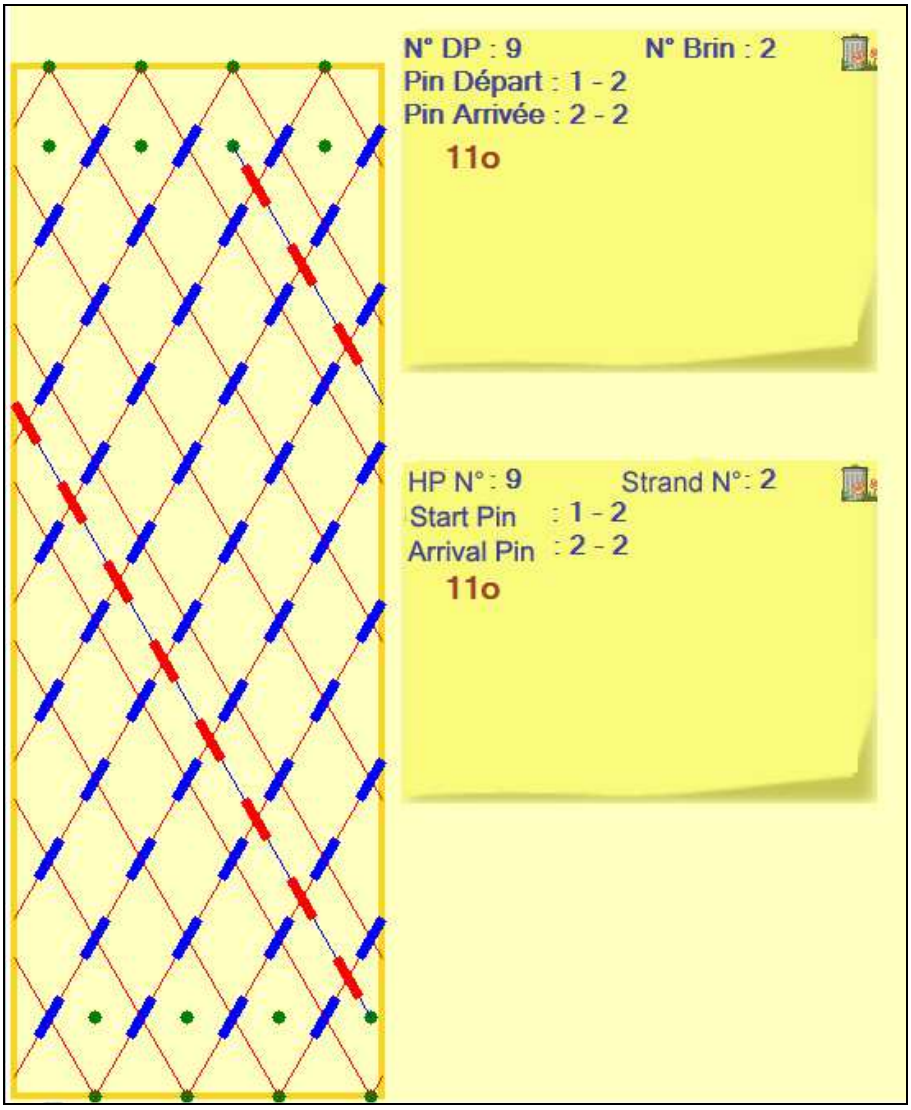
Fig 9



N°17 This is the '**POST-IT**'' icone just like in **RKnot Builder**.

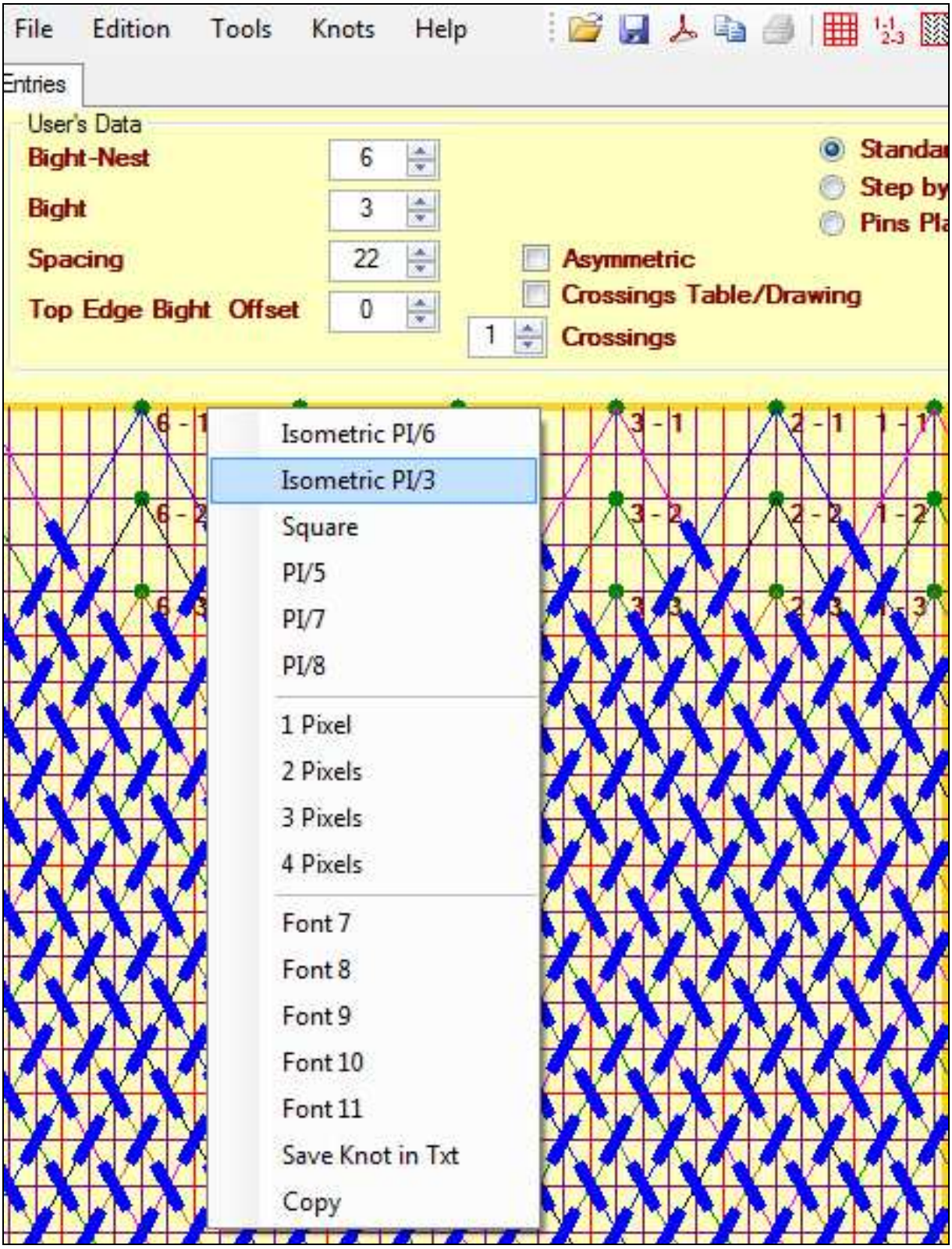
N°18
This is one « quits » the application.

Fig 10 **THE POST-IT.**



Post-it is useful when in **STEP by STEP** mode

Fig 11 the contextual menu.



The **CONTEXTUAL MENU** can be open with a **RIGHT** mouse click in the main area of the window.

The first « block': ISO to PI/8 gives the opportunity of **choosing the type of the TRACING GRID** that will be used.

The second block is for the **choice of the width or thickness of the lines** traced.

The third 'block' gives the choice of the **Font Size.**

The fourth 'block' offers

***** Save the Frame** that writes the characteristics of the knot in a file titled 'essai.txt'. That file is put in the folder where the application is or in the working directory. This file can be reloaded in ARIANE.

***** Copy**: copy the image of the grid to the clipboard. You can then paste it in image manipulation software.

Fig 12 (top right hand side of the window.)

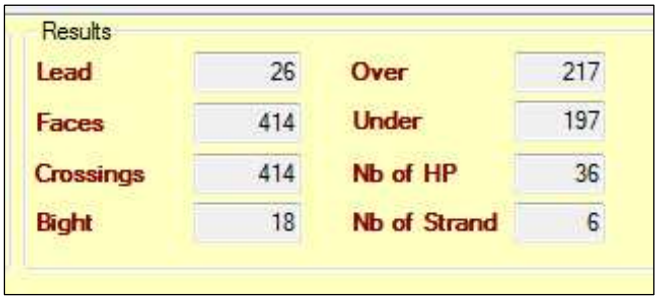


Fig 12 : User CANNOT MAKE any entry here.
Results.

Lead .

Faces == a Face may be made with several crossings.)

Crossings

Bight

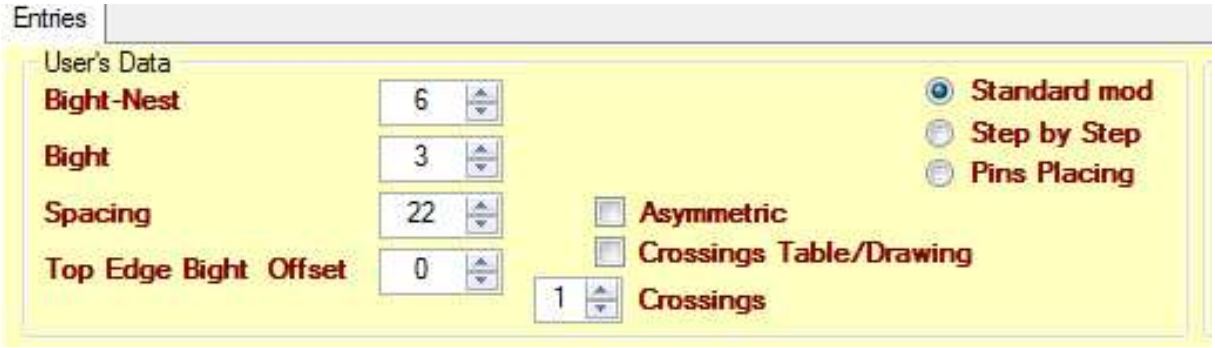
Over = OVER Xing

Under = UNDER Xing

Nb HP == NUMBER OF HALF-PERIODS.

Nb of Strand == NUMBER OF STRANDS (can be single strand or multi-strand.)

Fig 13 top left hand side of the window.)



It is in those fields that users make their entries.

Entries.

User's data.

Bight-Nest

Bight (in a nest)

SPACING or Schaake's distance 'x ' : the distance in ROW INTERVAL(vertical cylinder frame of reference) between the two innermost BIGHT-RIM.

Top Edge Bight OFFSET (a bit different from Schaake's **DELTA** for those knots.)

Fig 14 window in PINS PLACING mode

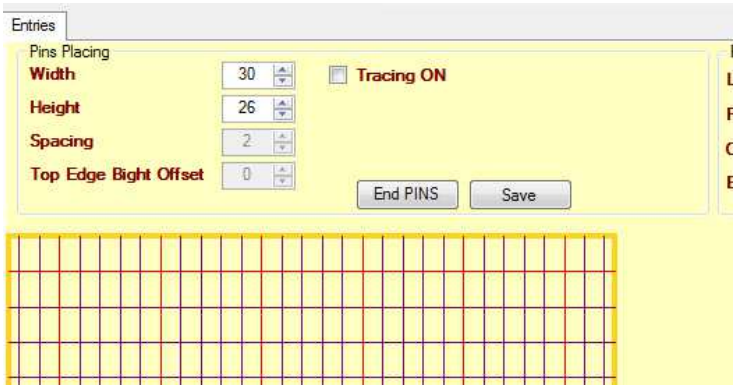
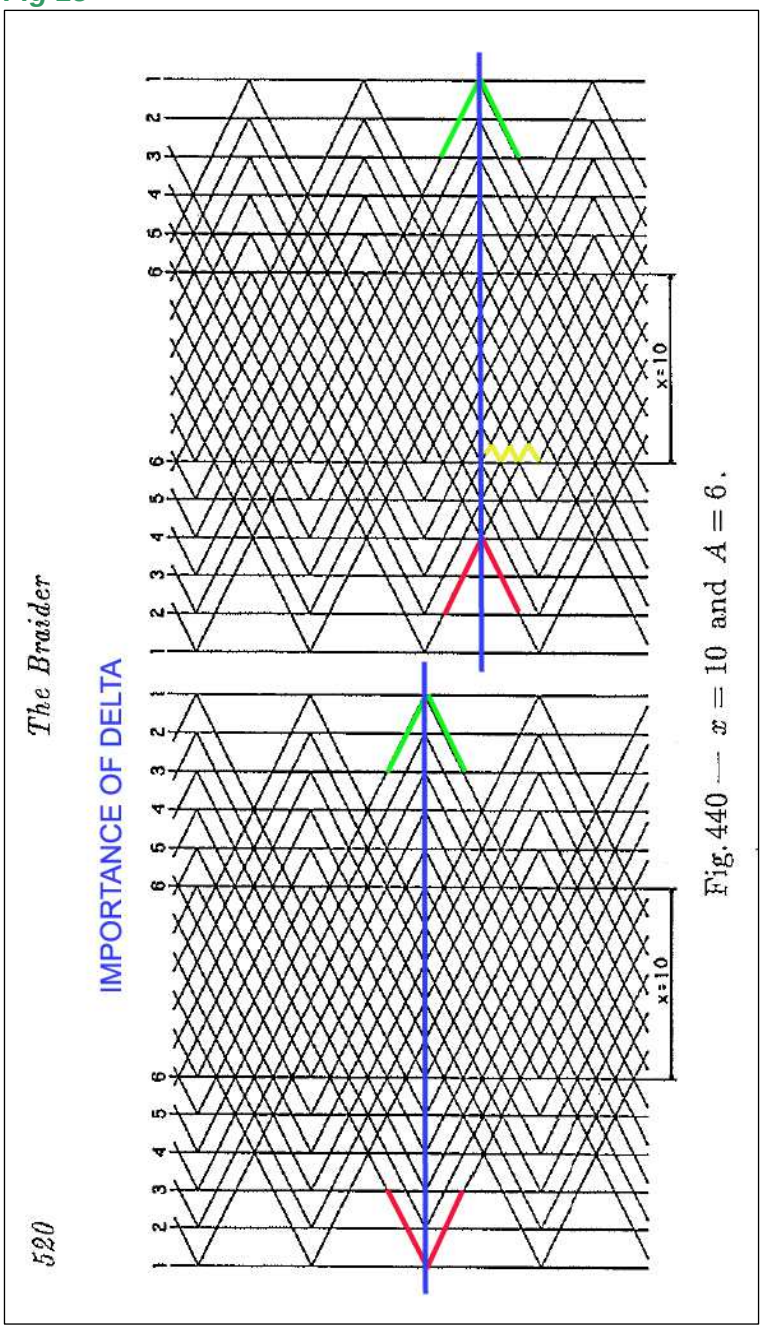


Fig 15



Apparently same characters :
** ** 6-PASS each,
same **SPACING** or distance 'x' = 10 each,
** 4 BIGHT-NEST each,
** same number of LEADs each,

BUT NOT SAME Top Edge Bights Offset
hence one grid can receive an evenly made Herringbone **CODING** but the other can not have it.

(see the next 3 illustrations.)

Fig 16

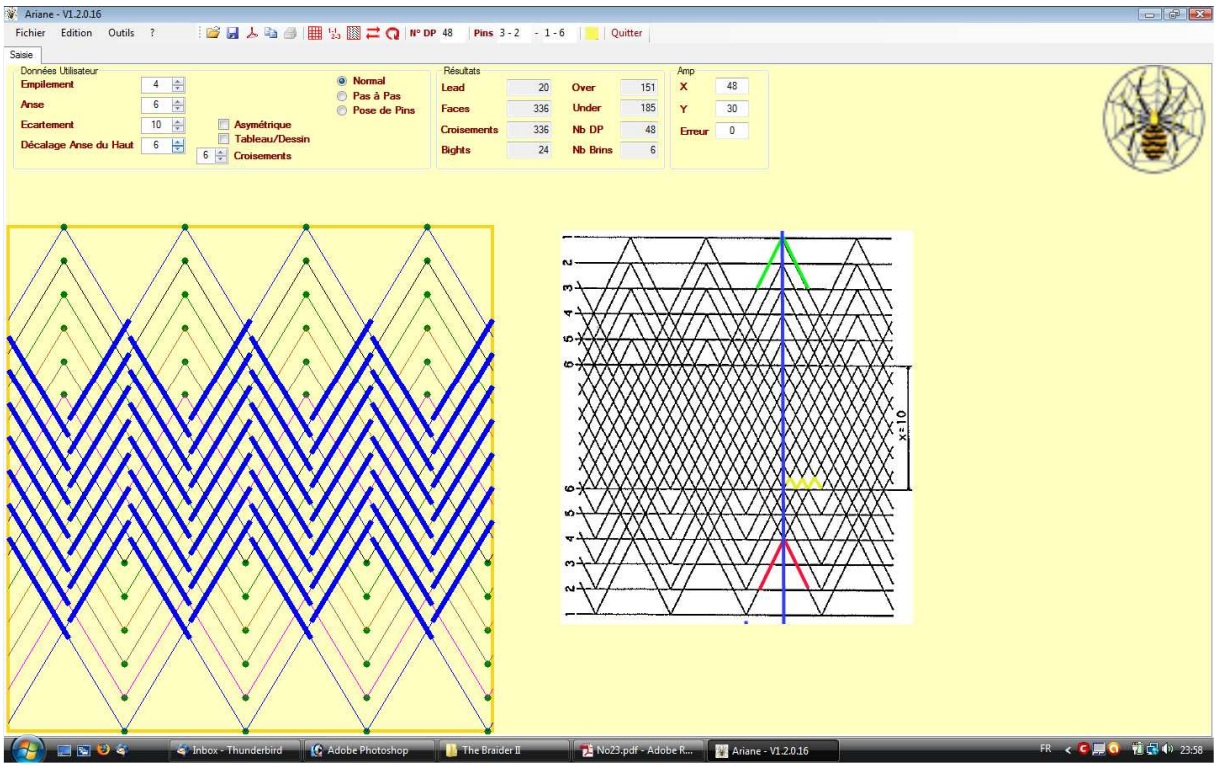

Ariane - V1.2.0.16
Fichier Edition Outils ?
N° DP 48 Pins 3 - 2 - 1 - 6 Quitter
Saisie
Données Utilisateur
Empilement 4
Anse 6
Ecartement 10
Décalage Anse du Haut 6
Asymétrique
Tableau/Dessin
6 Croisements
Normal
Pas à Pas
Pose de Pins
Résultats
Lead 20 Over 151
Faces 336 Under 185
Croisements 336 Nb DP 48
Bights 24 Nb Brins 6
Amp
X 48
Y 30
Erreur 0
x=10

Fig 17

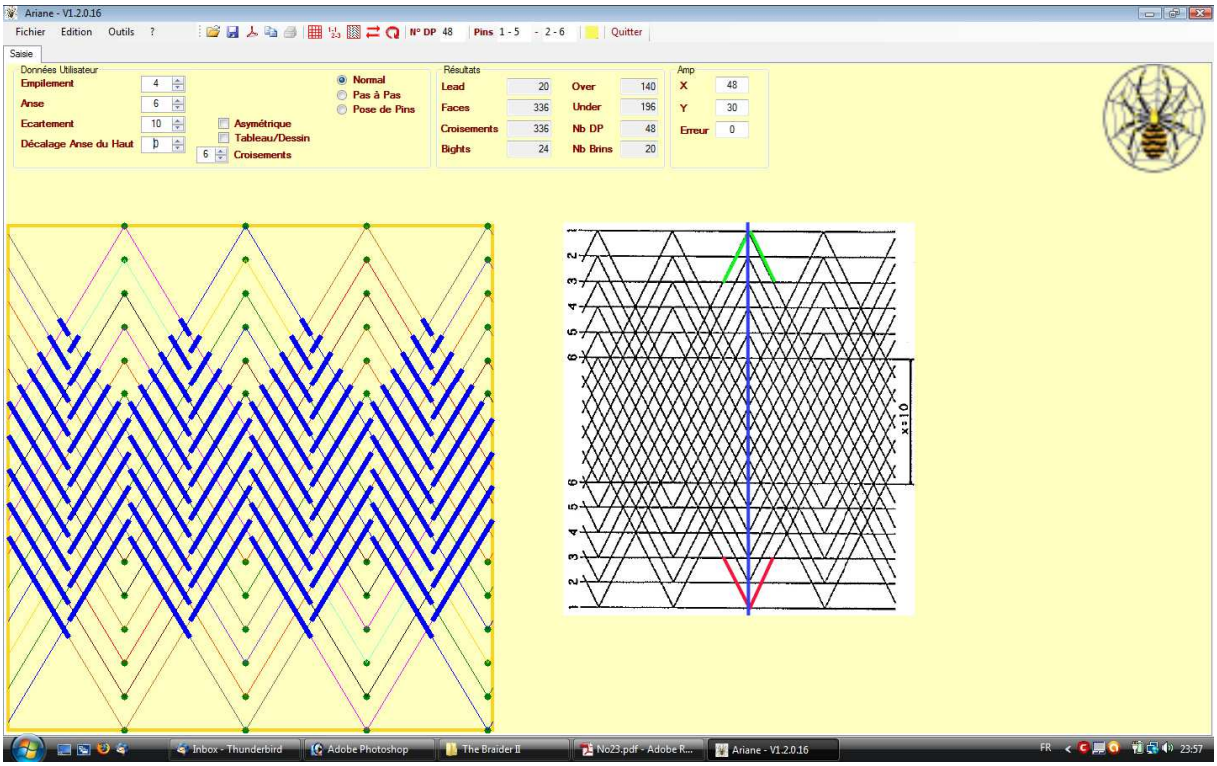
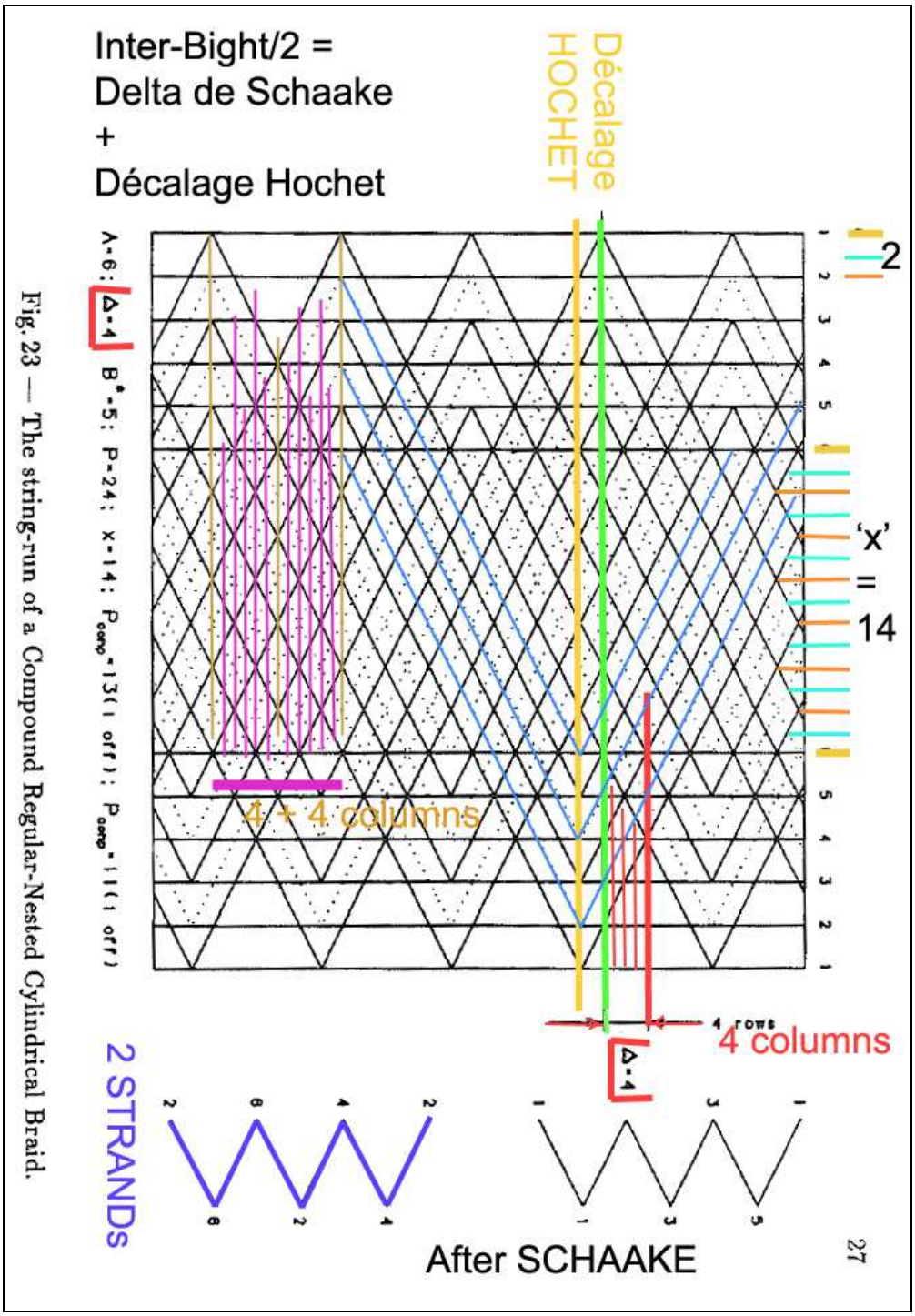

Ariane - V1.2.0.16
Fichier Edition Outils ?
N° DP 48 Pins 1 - 5 - 2 - 6 Quitter
Saisie
Données Utilisateur
Empilement 4
Anse 6
Ecartement 10
Décalage Anse du Haut 0
Asymétrique
Tableau/Dessin
6 Croisements
Normal
Pas à Pas
Pose de Pins
Résultats
Lead 20 Over 140
Faces 336 Under 196
Croisements 336 Nb DP 48
Bights 24 Nb Brins 20
Amp
X 48
Y 30
Erreur 0
x=10

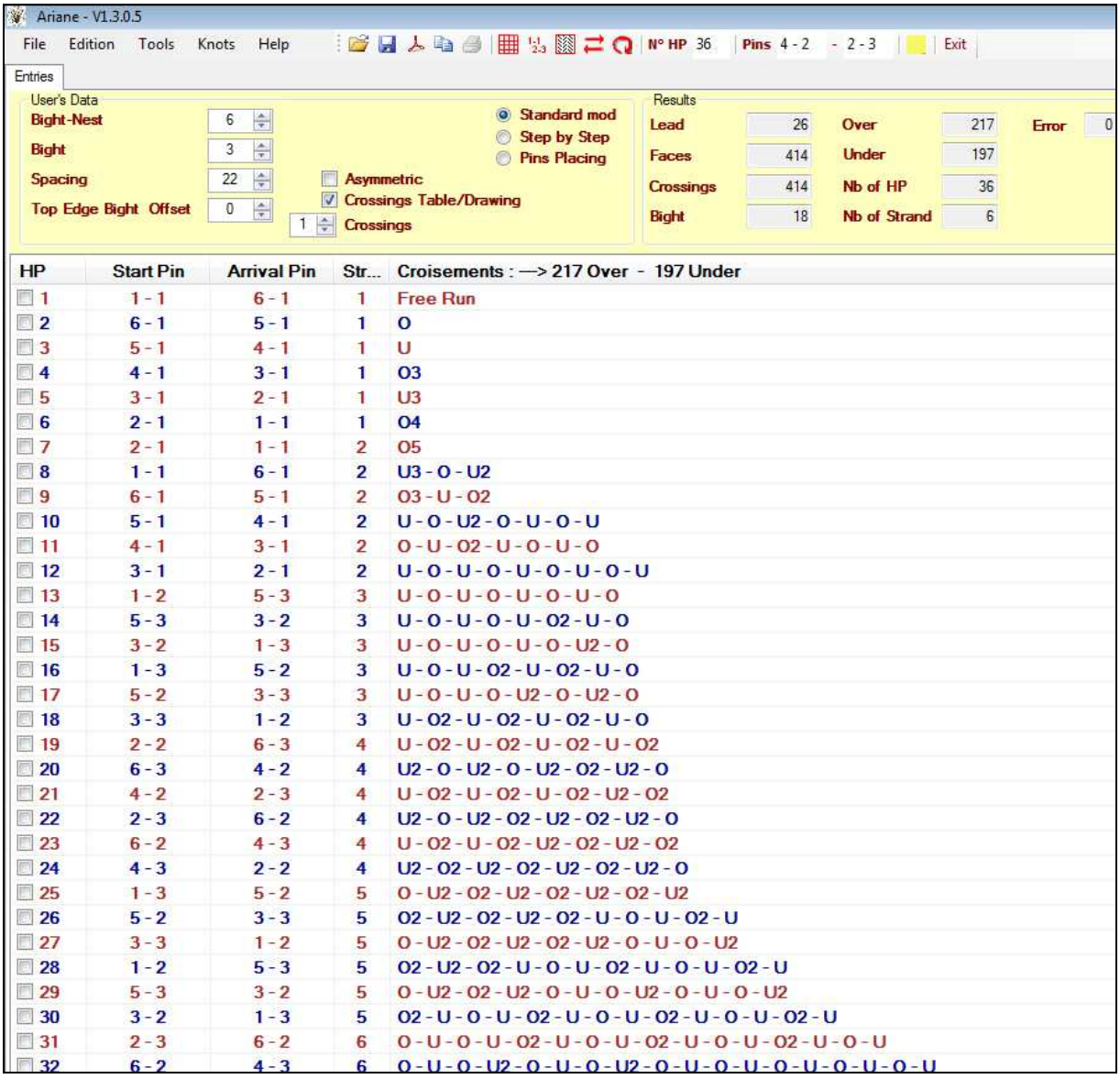
Fig 18 OFFSET is an important point.



Asymmetric
You chose this option for the **REGULAR** NESTED BIGHTS CYLINDRICAL KNOTS that do not have an equal number of BIGHT-RIMs on each knot side.(**Symmetric** is the default option.)

Tables / Grid this is what makes the choice of what is put on, the screen : knot grid or HP codes table.

Fig 19



HP	Start Pin	Arrival Pin	Str...	Croisements : —> 217 Over - 197 Under
1	1 - 1	6 - 1	1	Free Run
2	6 - 1	5 - 1	1	O
3	5 - 1	4 - 1	1	U
4	4 - 1	3 - 1	1	O3
5	3 - 1	2 - 1	1	U3
6	2 - 1	1 - 1	1	O4
7	2 - 1	1 - 1	2	O5
8	1 - 1	6 - 1	2	U3 - O - U2
9	6 - 1	5 - 1	2	O3 - U - O2
10	5 - 1	4 - 1	2	U - O - U2 - O - U - O - U
11	4 - 1	3 - 1	2	O - U - O2 - U - O - U - O
12	3 - 1	2 - 1	2	U - O - U - O - U - O - U - O - U
13	1 - 2	5 - 3	3	U - O - U - O - U - O - U - O
14	5 - 3	3 - 2	3	U - O - U - O - U - O2 - U - O
15	3 - 2	1 - 3	3	U - O - U - O - U - O - U2 - O
16	1 - 3	5 - 2	3	U - O - U - O2 - U - O2 - U - O
17	5 - 2	3 - 3	3	U - O - U - O - U2 - O - U2 - O
18	3 - 3	1 - 2	3	U - O2 - U - O2 - U - O2 - U - O
19	2 - 2	6 - 3	4	U - O2 - U - O2 - U - O2 - U - O2
20	6 - 3	4 - 2	4	U2 - O - U2 - O - U2 - O2 - U2 - O
21	4 - 2	2 - 3	4	U - O2 - U - O2 - U - O2 - U2 - O2
22	2 - 3	6 - 2	4	U2 - O - U2 - O2 - U2 - O2 - U2 - O
23	6 - 2	4 - 3	4	U - O2 - U - O2 - U2 - O2 - U2 - O2
24	4 - 3	2 - 2	4	U2 - O2 - U2 - O2 - U2 - O2 - U2 - O
25	1 - 3	5 - 2	5	O - U2 - O2 - U2 - O2 - U2 - O2 - U2
26	5 - 2	3 - 3	5	O2 - U2 - O2 - U2 - O2 - U - O - U - O2 - U
27	3 - 3	1 - 2	5	O - U2 - O2 - U2 - O2 - U2 - O - U - O - U2
28	1 - 2	5 - 3	5	O2 - U2 - O2 - U - O - U - O2 - U - O - U - O2 - U
29	5 - 3	3 - 2	5	O - U2 - O2 - U2 - O - U - O - U2 - O - U - O - U2
30	3 - 2	1 - 3	5	O2 - U - O - U - O2 - U - O - U - O2 - U - O - U - O2 - U
31	2 - 3	6 - 2	6	O - U - O - U - O2 - U - O - U - O2 - U - O - U - O2 - U - O - U
32	6 - 2	4 - 3	6	O - U - O - U2 - O - U - O - U2 - O - U - O - U - O - U - O - U - O - U

Three radio buttons.
Normal == it is the 'normal mode with no special options.

Pas à Pas == **STEP BY STEP**
Just as in RKnot Builder you get the HP one after the other using mouse clicks.

Pose de Pins == **Pins laying** This is the free hand entry of PINs-***NOT in Version1 nor in Version2-***

Fig 20

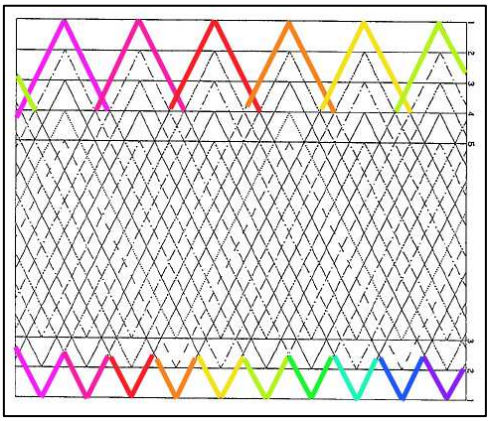


Fig 4 bis illustrates the concept of BIGHT-NEST : 6 at the TOP and 10 at the BOTTOM.

Fig 21

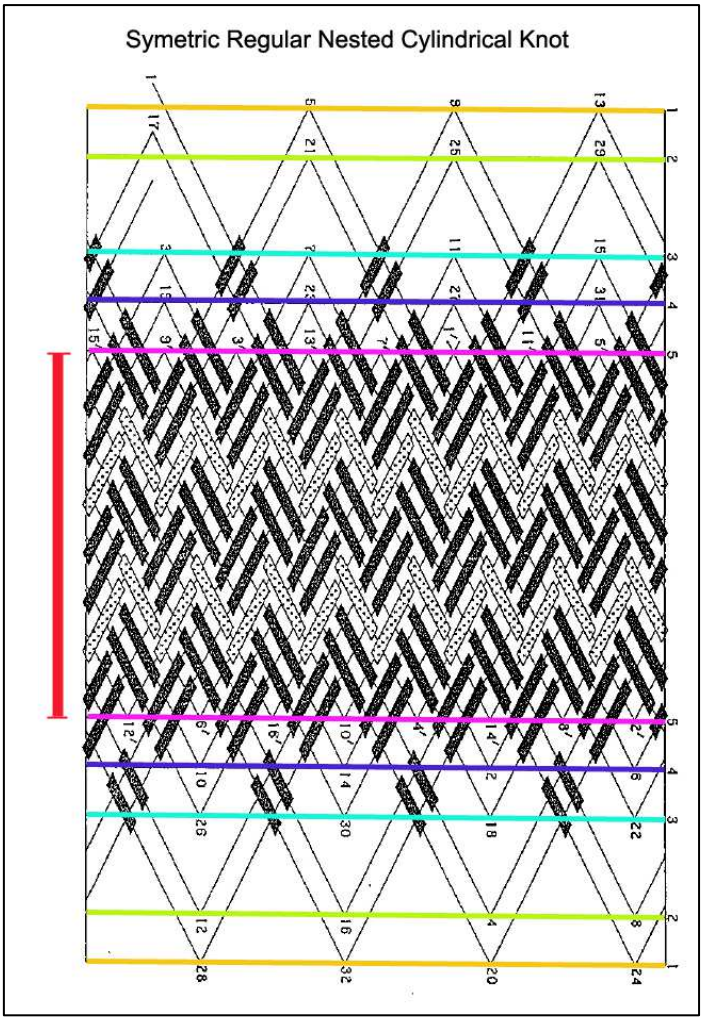


Fig21 illustrates the **SYMETRIC REGULAR** :

they have the same number of BIGHT-NESTs at **TOP** and **BOTTOM** with each having the same number of BIGHTS hence the same number of BIGHT-RIMs on which the PINS are put.

The red vertical line is the **SPACING**, the distance 'x' between the two innermost BIGHT-RIMs. (in violet.)

Fig 22

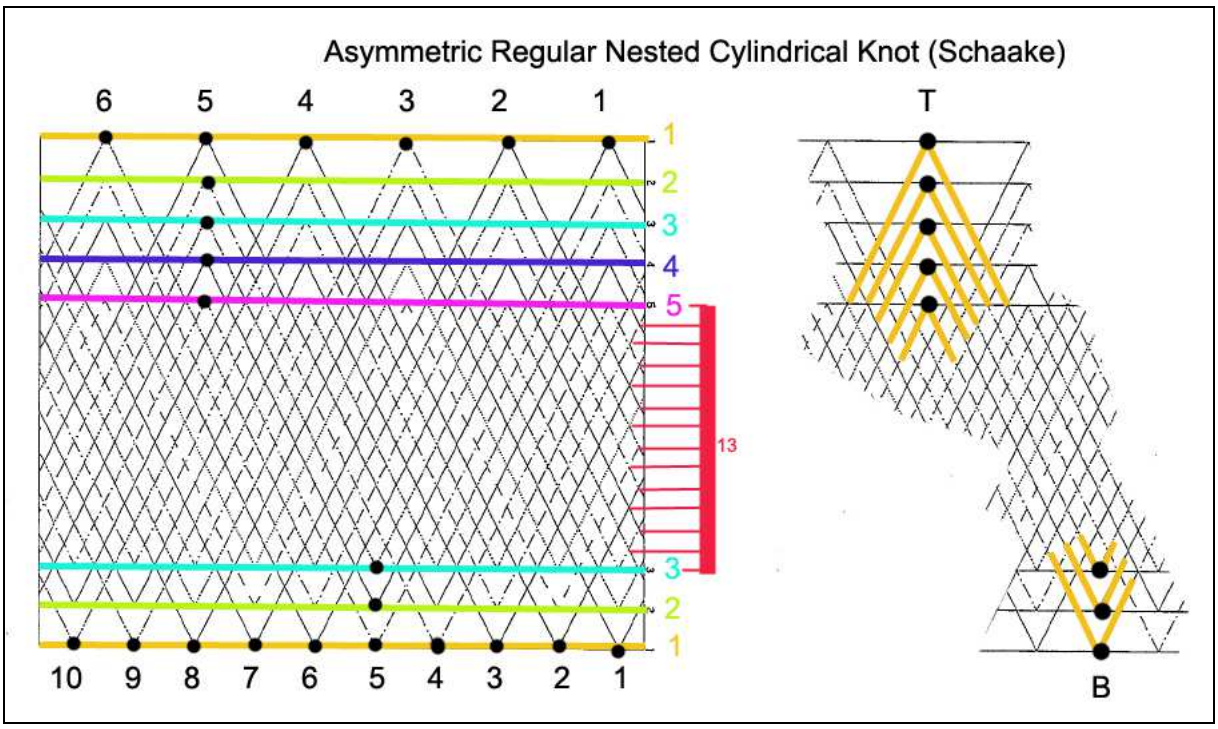
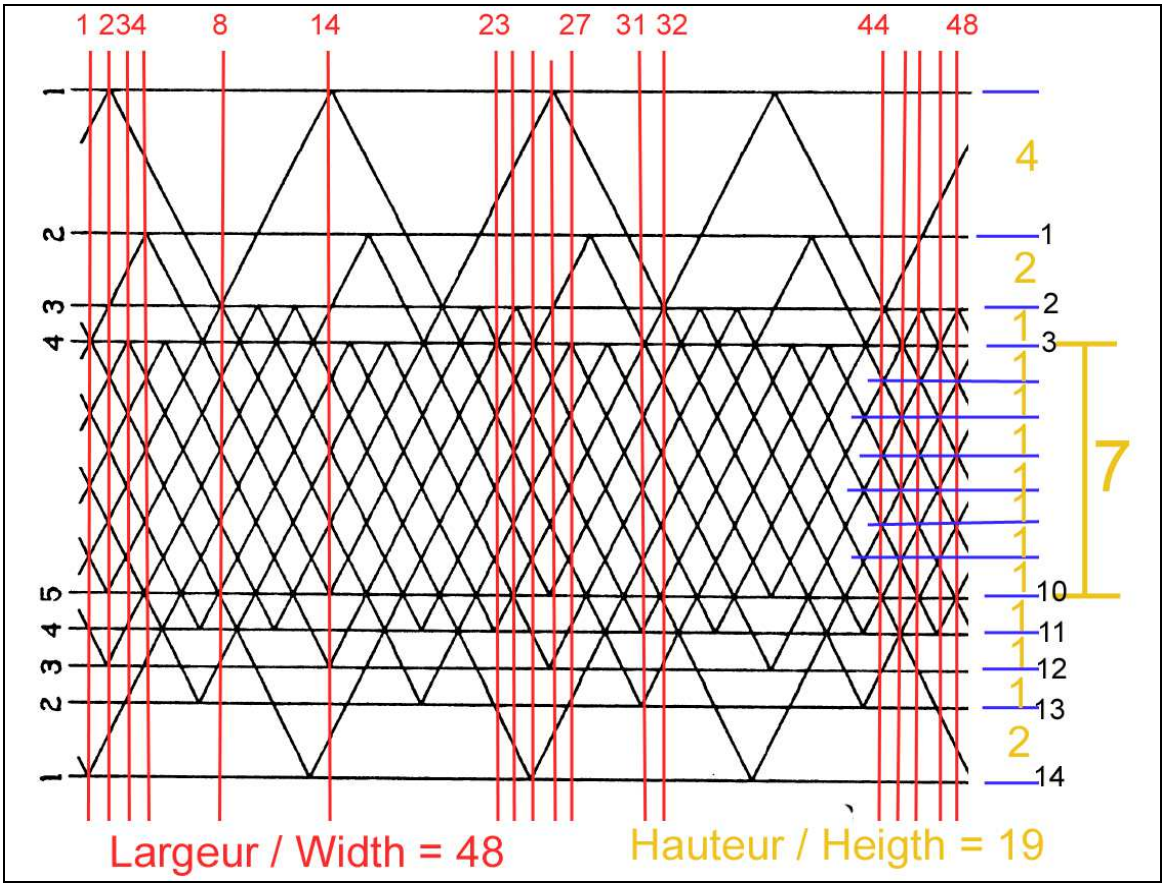


Fig 22 illustrates the **REGULAR ASYMMETRIC** that do not have the same number of BIGHT-NESTs on each KNOT BORDER, not the same number of BIGHT-RIM, not the same number of BIGHTs in their BIGTH-NESTs.

LET US SEE SOME NOTIONS THAT ARE NECESSARY FOR THE MANUAL POSITIONING OF THE PINS

Fig 23



The fast and sure way to get a correct drawing and to get the grid measurements is to use an **ISOMETRIC GRID**.

Fig 24 mode PINS PLACING window

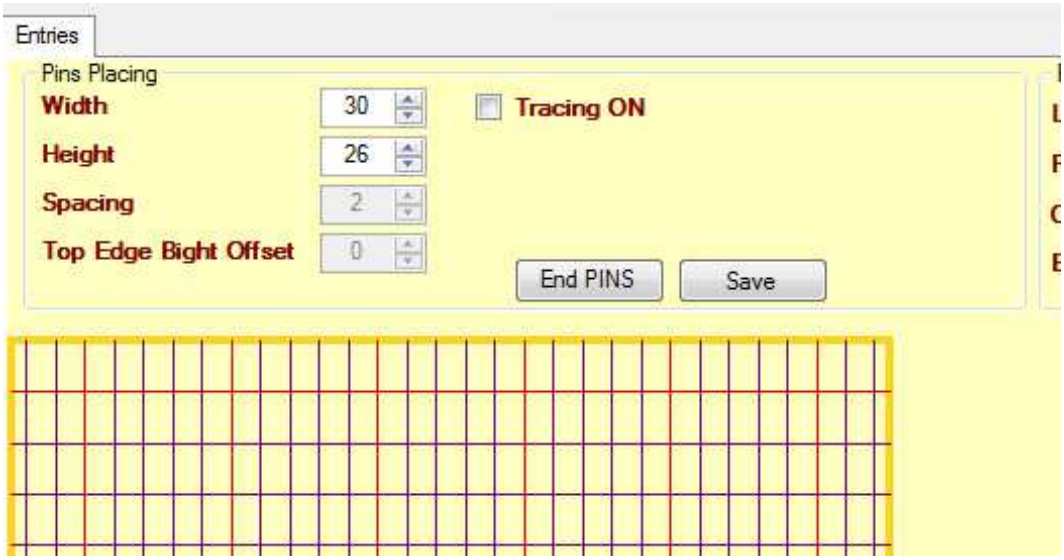
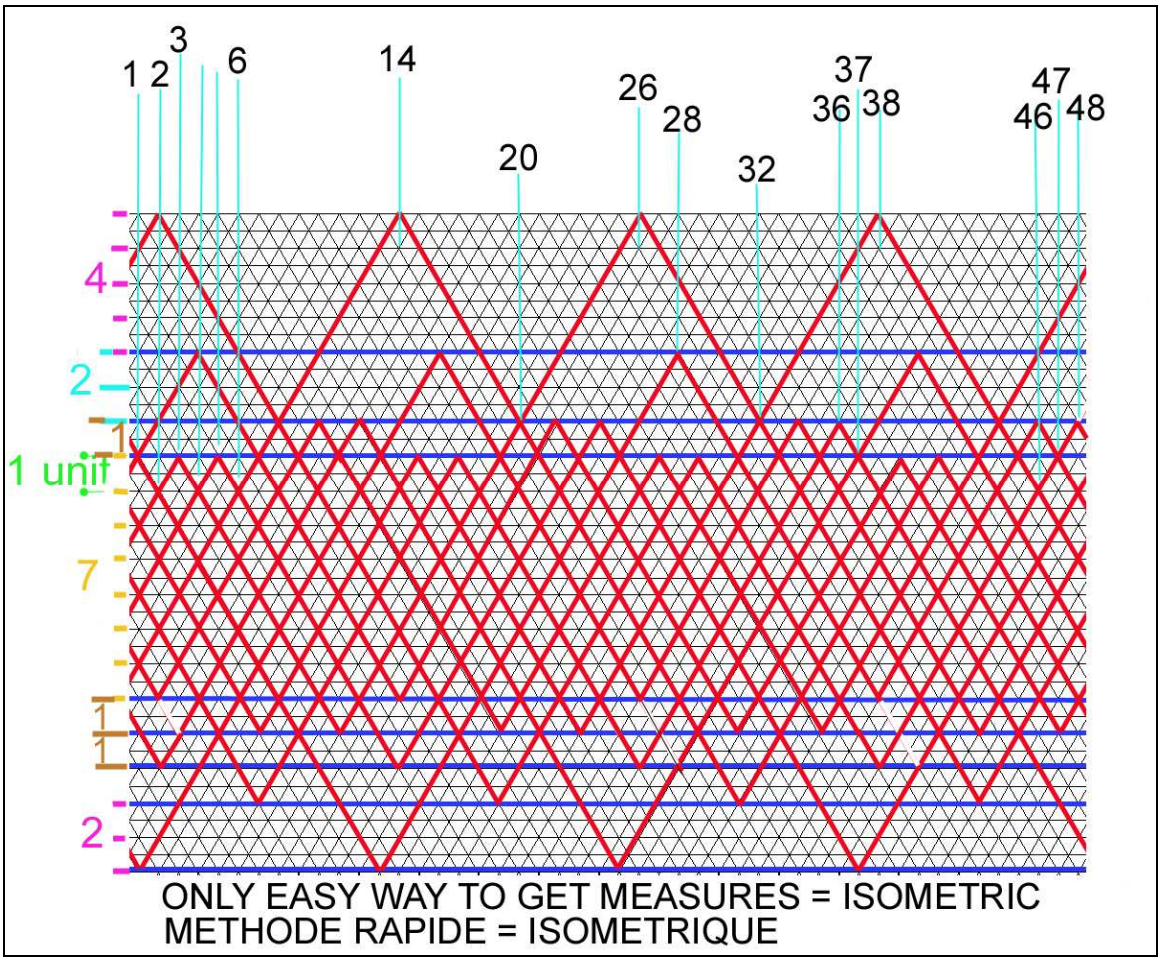


Fig 25



SOME DETAILS ABOUT THE NOTIONS OF REGULAR, IRREGULAR, SYMMETRIC, ASYMMETRIC.

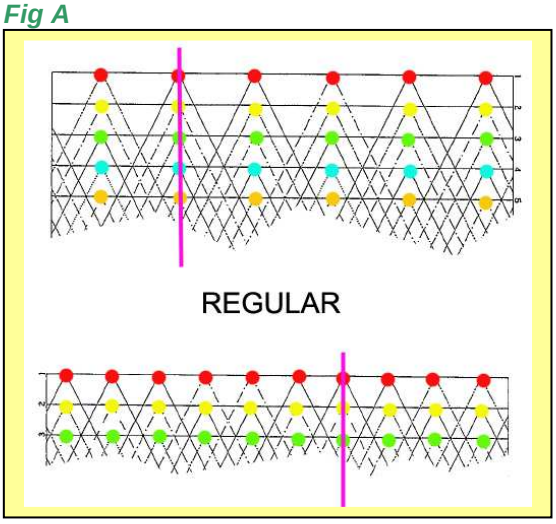
ALL THE FOLLOWING ILLUSTRATIONS ARE QUOTED FROM SCHAAKE's WORK (and sometime modified)

THE RETAINED NOMENCLATURE FOR THIS ***ARIANE*** PROGRAM IS :

***** REGULAR SYMMETRIC**
***** REGULAR ASYMMETRIC**
***** IRREGULAR**

BUT… we could have kept (not useful, but the geometry does exist) also
--- IRREGULAR SYMMETRIC
--- IRREGULAR ASYMMETRIC
But this separation symmetric/asymmetric is useless for the decision to go to MANUAL PINS POSITIONING: as soon as it is IRREGULAR it is "manual" whether it is symmetric or asymmetric so the symmetry does not change what User must do while in the REGULAR the decision of User is influenced by symmetry or not.

Fig A



It is faster to ask if the knot complies with the 3 criteria of the REGULAR KNOTS, if even only one criterion is missing then it is an IRREGULAR.

***** ON BOTH KNOT EDGE ALL the BIGHT-NESTs WITHOUT EXCEPTION have ONE BIGHT on the MOST EXTERNAL BIGHT-RIM. BIGHT-RIM N°1. (Criterion ONE).**

***** ON A GIVEN KNOT EDGE ALL THE BIGHT-NESTs have the same number of BIGHTs. This number is the same for both edges in symmetric and different in asymmetric.(Criterion TWO corollary of Criterion ONE).**

*****In EACH BIGHT-NEST OF A KNOT ALL the BIGHTS (PINs) belonging to it are PERFECTLY ALIGNED and INSIDE A BIGHT-NEST THERE IS NO PIN BELONGING TO ANOTHER BIGHT-NEST. (Criterion THREE).**

ALL THE CYLINDRICAL KNOTS WITH BIGHT-NESTs THAT COMPLY WITH THOSE THREE CRITERIA ARE SAID TO BE "REGULAR". ONE MISSING CRITERION MAKES IT AN "IRREGULAR".

Fig B

IRREGULAR : missing Criterion ONE.
OK Criterion TWO and Criterion THREE.

REGULAR : the THREE Criteria are complied with.

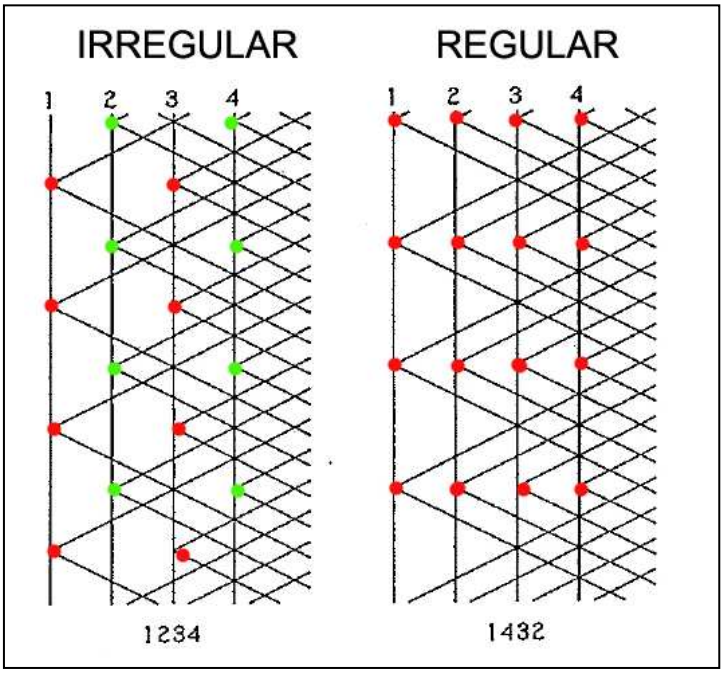
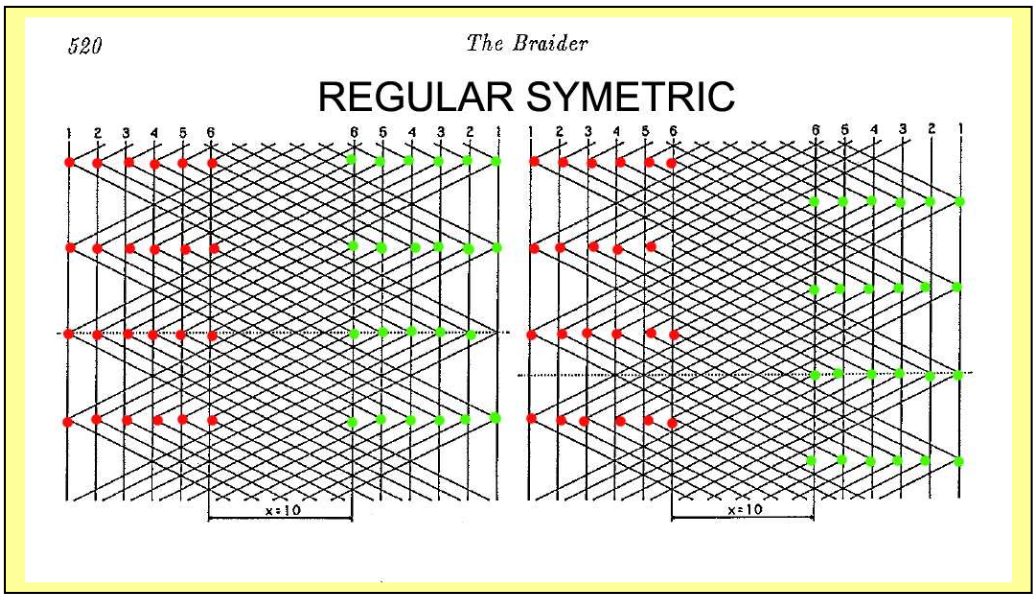
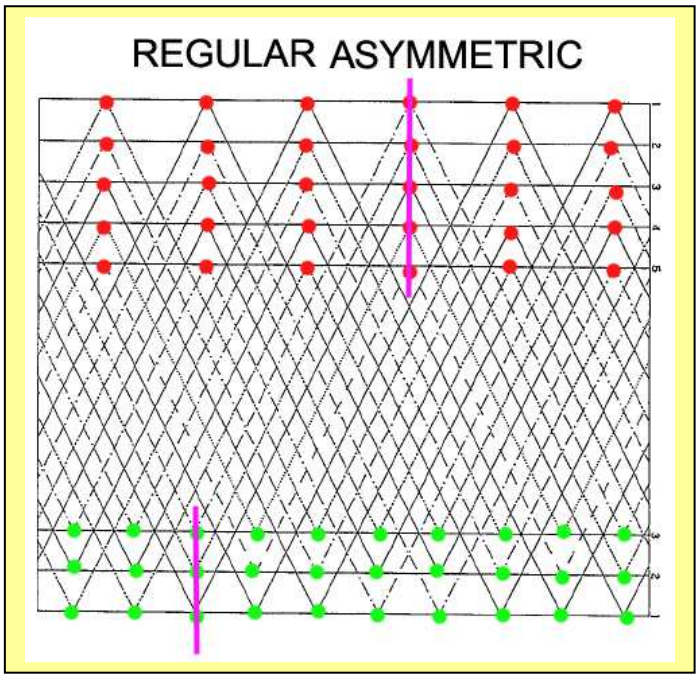


Fig C



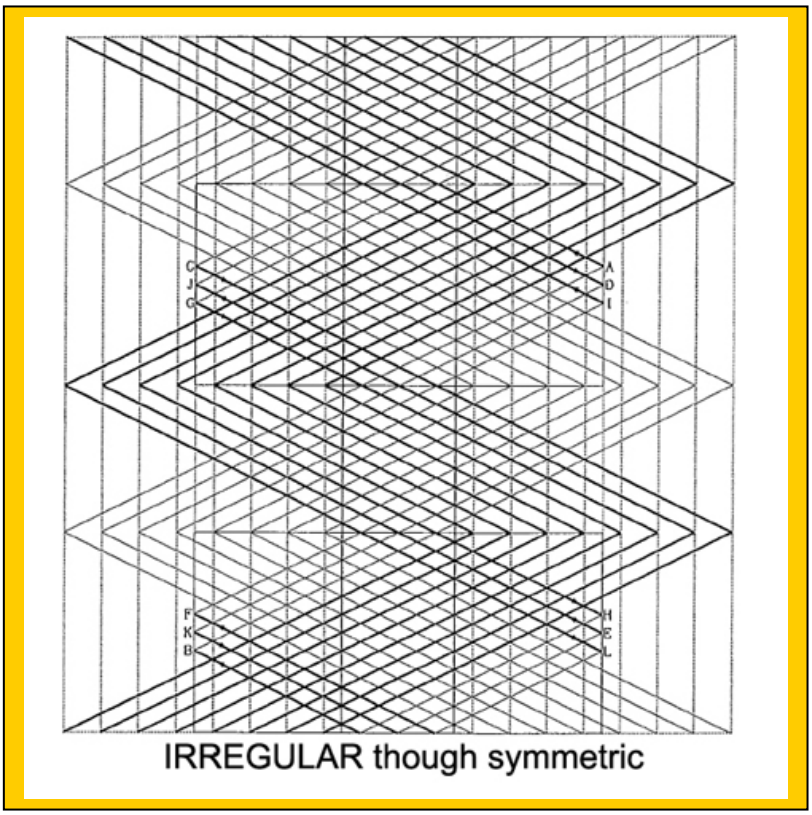
SYMMETRIC == same number of BIGHT-RIMs on each side of the knot (here 6).

Fig D



ASYMMETRIC== the number of BIGHT-RIMs is different at the TOP (6)from what it is at the BOTTOM (3).

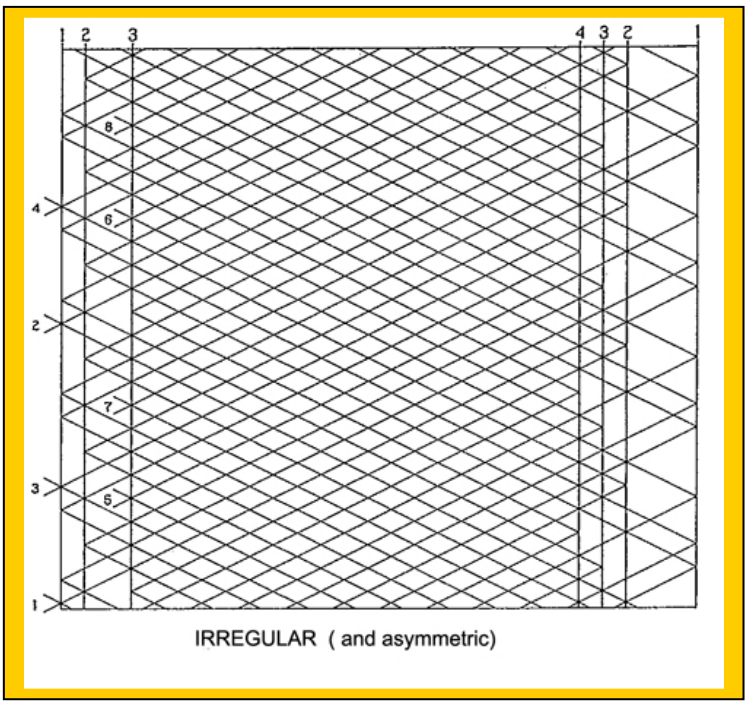
Fig E



Criterion TWO is missing.

Though **SYMMETRY is not taken in account for** IRREGULAR this one has the same number of BIGHT-RIMs on each side of the knot so it is indeed symmetric in a way Which does not fully coincide with the nomenclature meaning of the word.

Fig F

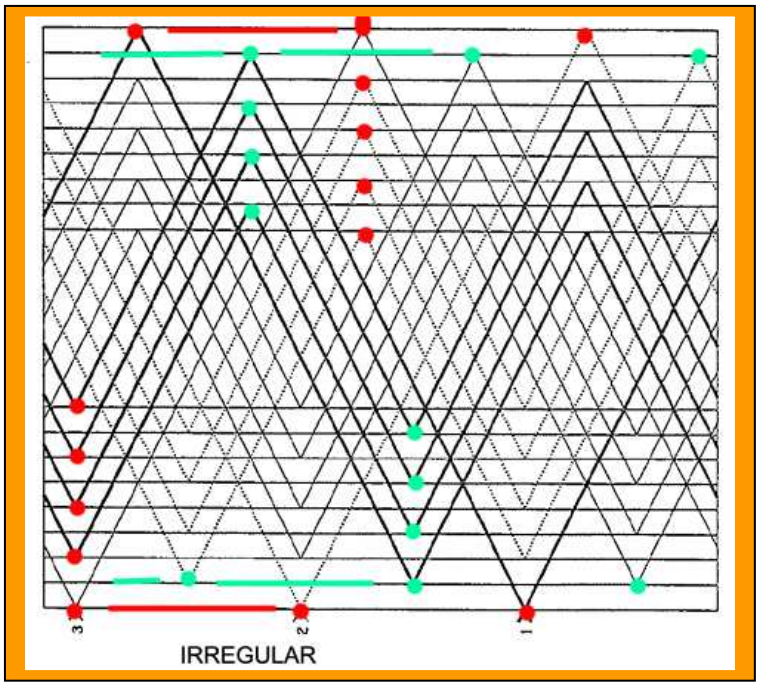


IRREGULAR (and asymmetric)

Though **SYMETRY is not taken in account for IRREGULAR** this one does not have the same number of BIGHT-RIMs on each side of the knot so it is indeed asymmetric

Fig G

Criterion ONE and Criterion TWO are missing.



IRREGULAR

Fig H

At the TOP Criterion THREE is missing.

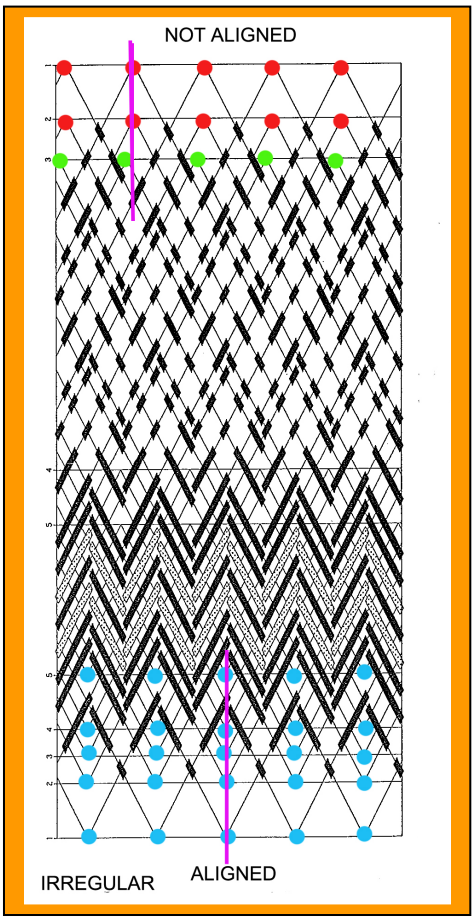


Fig I

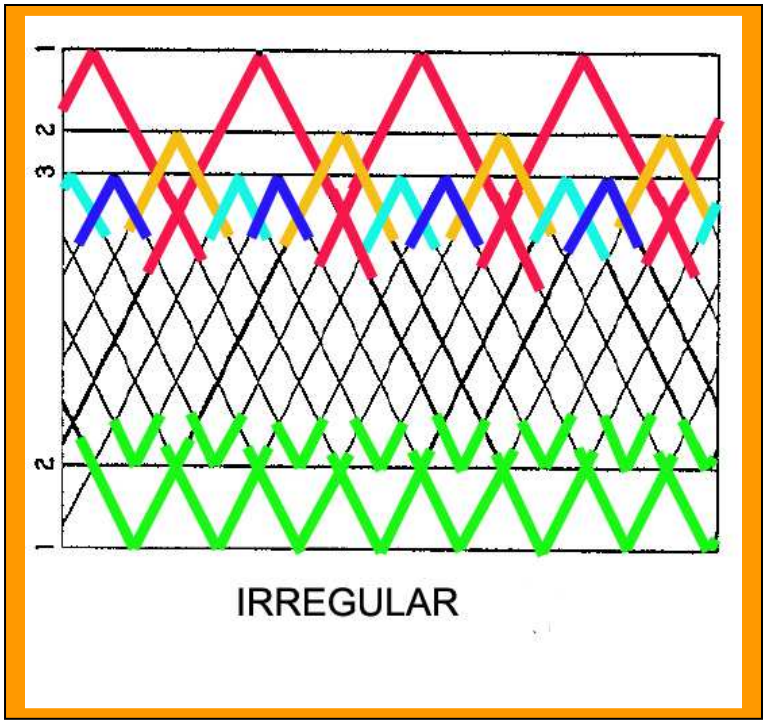
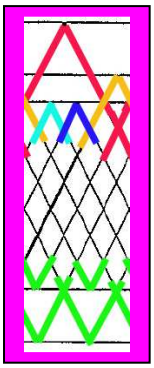


Fig J



Despite the *Fig J* "module" which by "repetition", brings

rhythm so “regularity” this is NOT A REGULAR in the sense of the nomenclature.

Fig K AN EASY TO DETECT IRREGULAR KNOT.

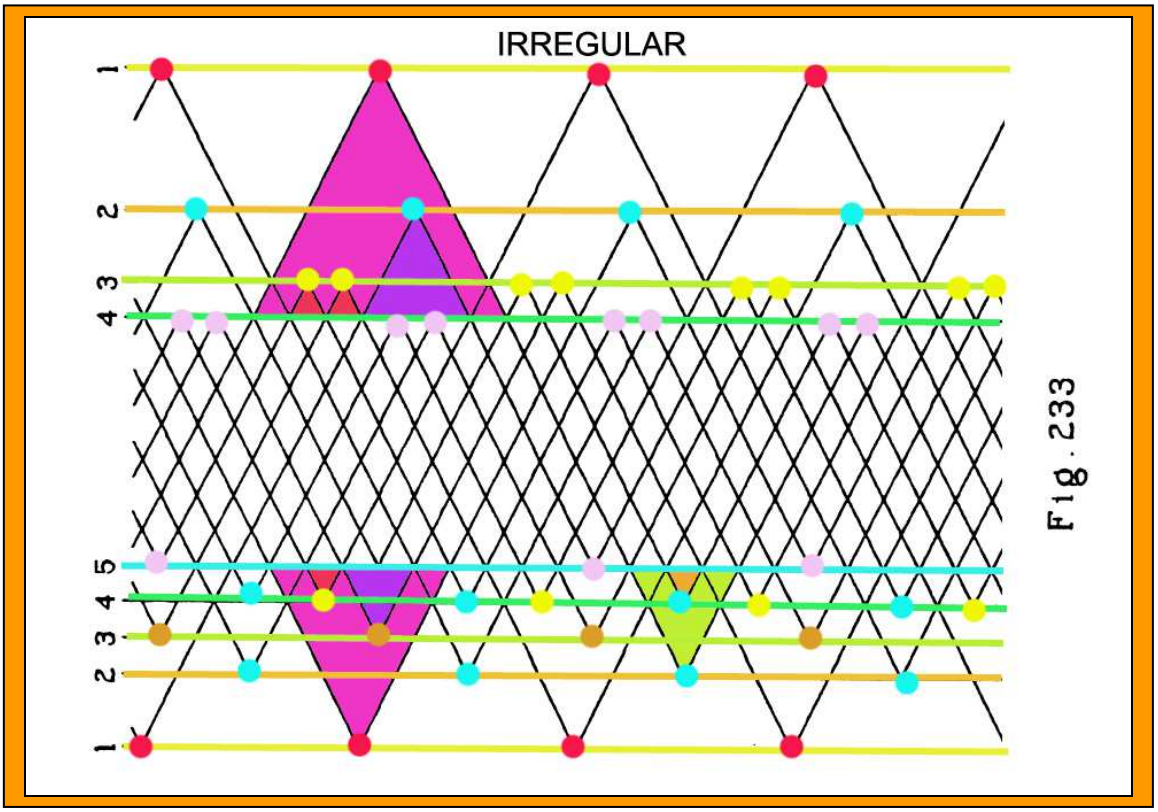


Fig L a sampling of IRREGULAR.

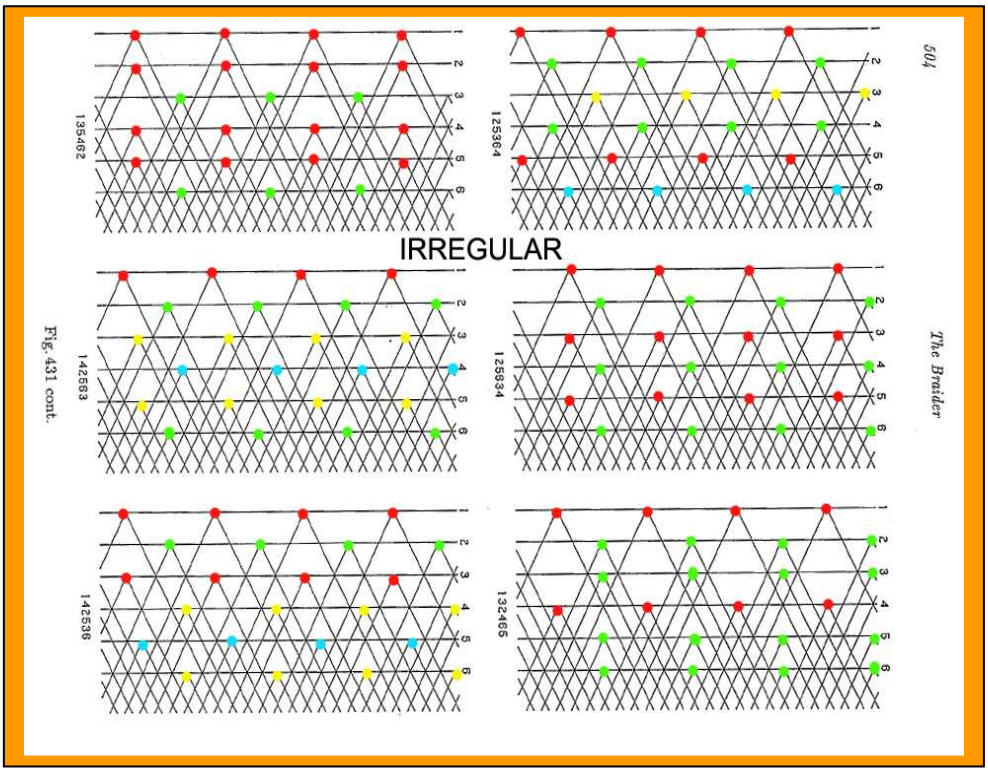
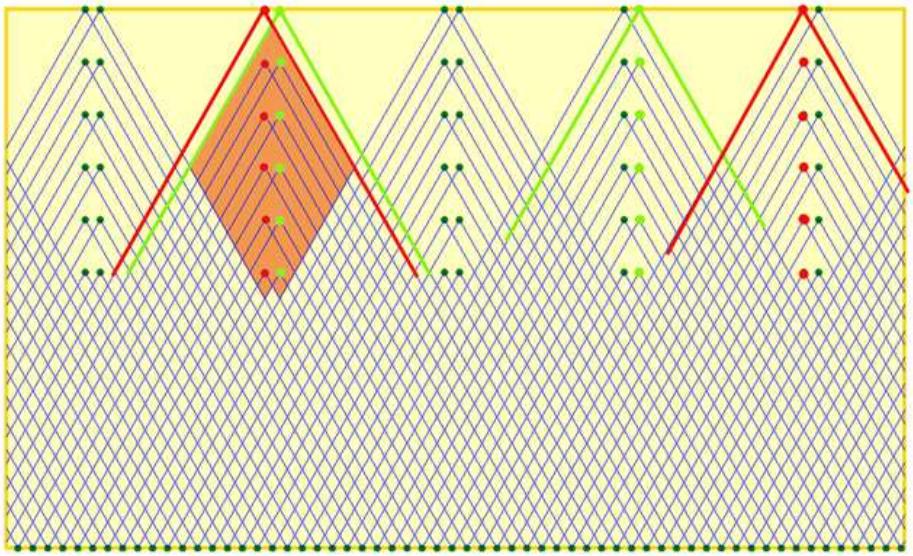


Fig M Irregular



Inside a given BIGHT-NEST OF THE TOP KNOT EDGE there are PINs that belong to another BIGHT-RIM that are not perfectly aligned with the considered BIGHT-NEST and all that is violating Criterion THREE.

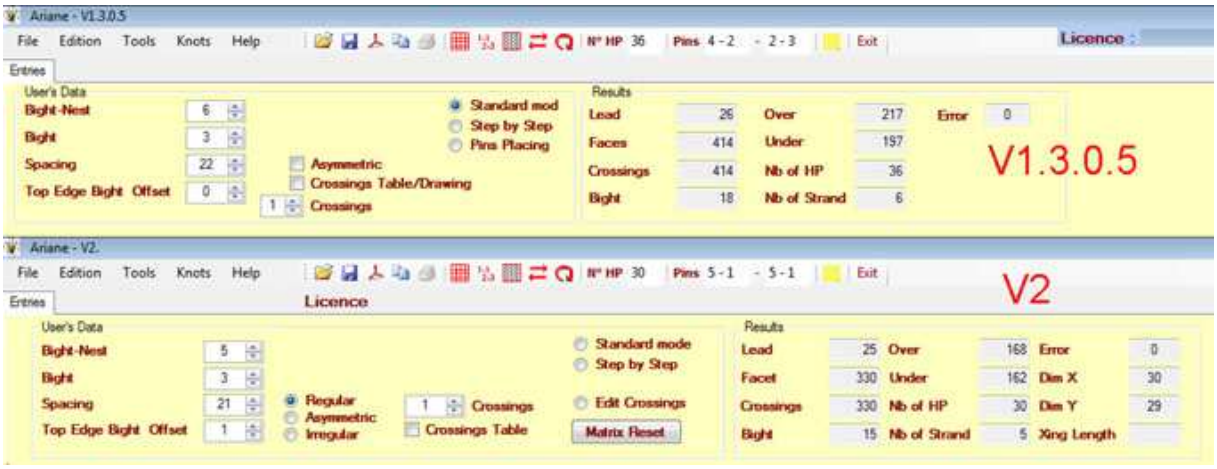
USER'sTIPS

SPECIFIC V2

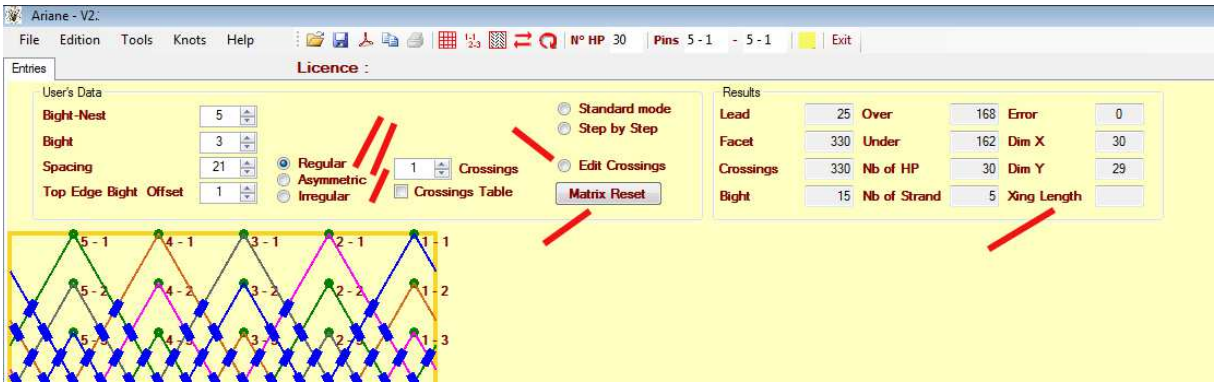
VERSION UPGRADE ARE FREE FOR ALL OWNERS OF A LICENSED VERSION

SOME CHANGES IN APPEARANCE FOR NEW FUNCTIONAL POSSIBILITIES.

***** A new "dashboard"



Besides some 'musical chairs' cosmetic changes there are several "hard" changes

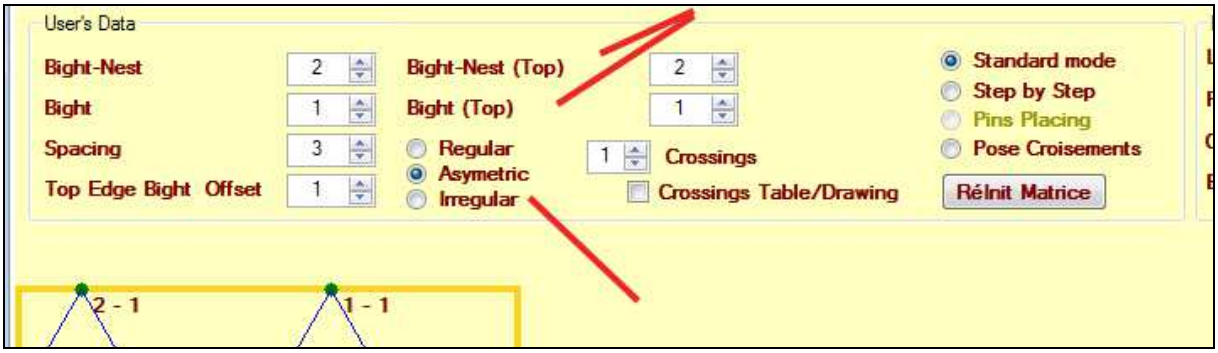


In **V1** the default mode was for the **REGULAR** TYPE of NESTED-BIGHTS CYLINDRICAL KNOTS (NBCK).

Now this mode is individually activated via a radio button.
JUST AS WHEN DRIVING YOU WATCH THE DASHBOARD in **V2** ALWAYS PAY ATTENTION TO THE RADIO BUTTONS SETTING.

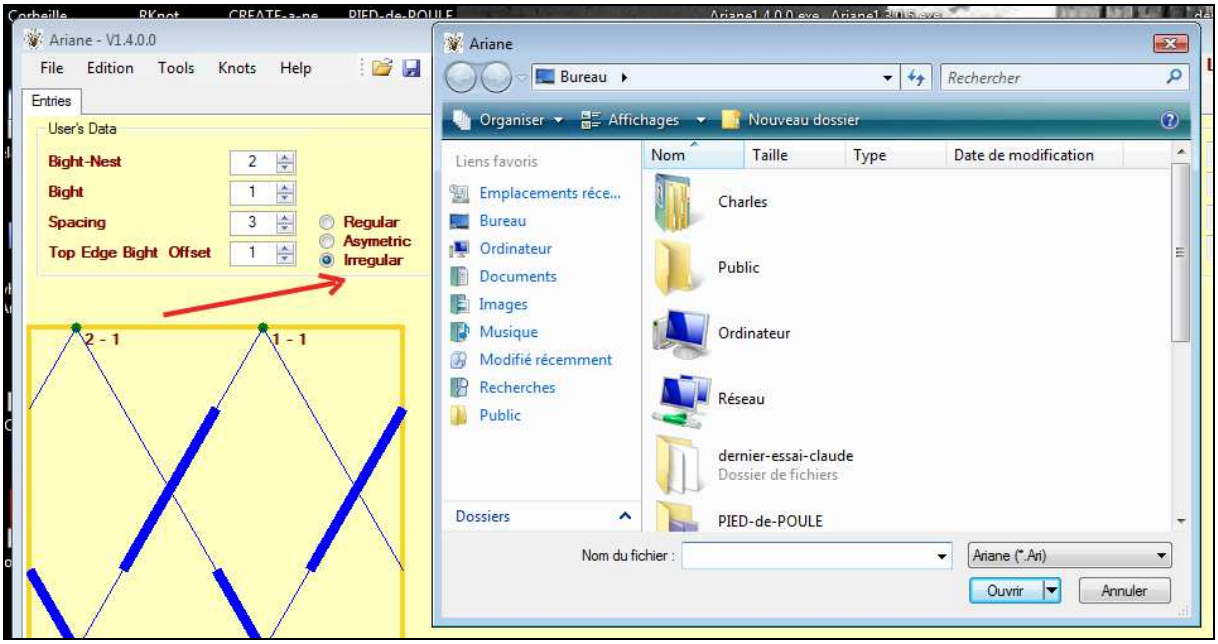
REGULAR is short for **REGULAR SYMMETRIC** NBCK

ASYMMETRIC is short **REGULAR ASYMMETRIC** NBCK
On activation this choice changes the dashboard put on screen to allow the necessary entries for that TYPE of NBCK as shown in the following illustration.



IRREGULAR is both for
IRREGULAR NBCK in the nomenclature sense
and for knots that have been **MANUALLY TWEAKED BY USER** so irregular compared to the default automatic making by Ariane.

Selection of this radio button will open a window so that you can load an *existing* .ARI file

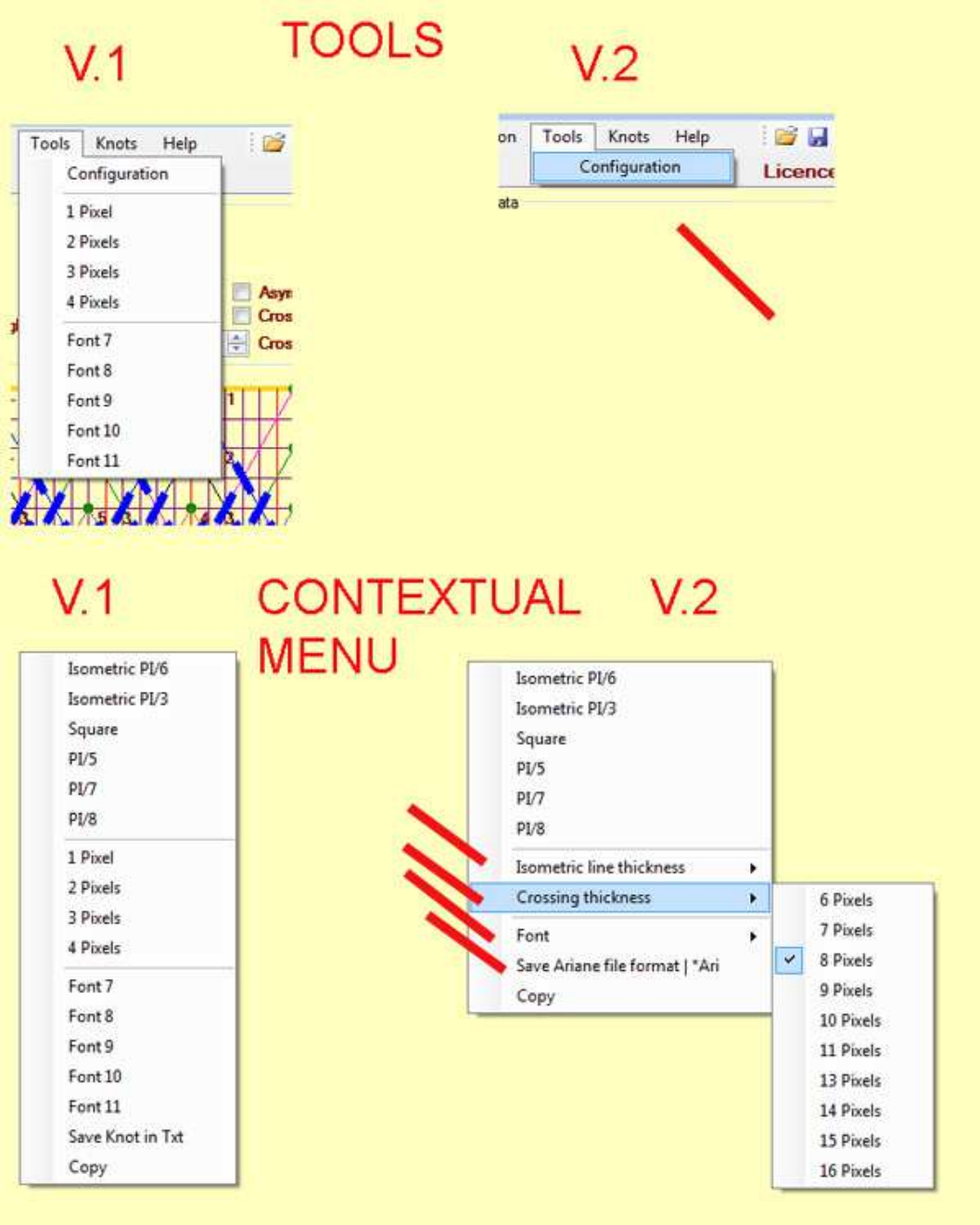


PINS PLACING is neutralized in this **V2** version ; it is the module that allows manual positioning of the pins to draw **IRREGULAR NBCK** such as those shown in the User's TIPS distributed with **V1**. In the same spirit do not take in consideration the rightmost part of the dashboard except '**error'** and '**Xing length'**

STEP by STEP is explained in User's Tips : Half Periods are put on screen one after the other using mouse clicks. (Post-it explicitely shows "details" for the current "STEP'

STANDARD MODE is the usual mode and this is what you need to select to "exit" from **PINS PLACINGS** and **EDIT CROSSINGS** .

***** New TOOLS menu and CONTEXTUAL menu



In **TOOLS** (top menu bar) only remains **CONFIGURATION**.

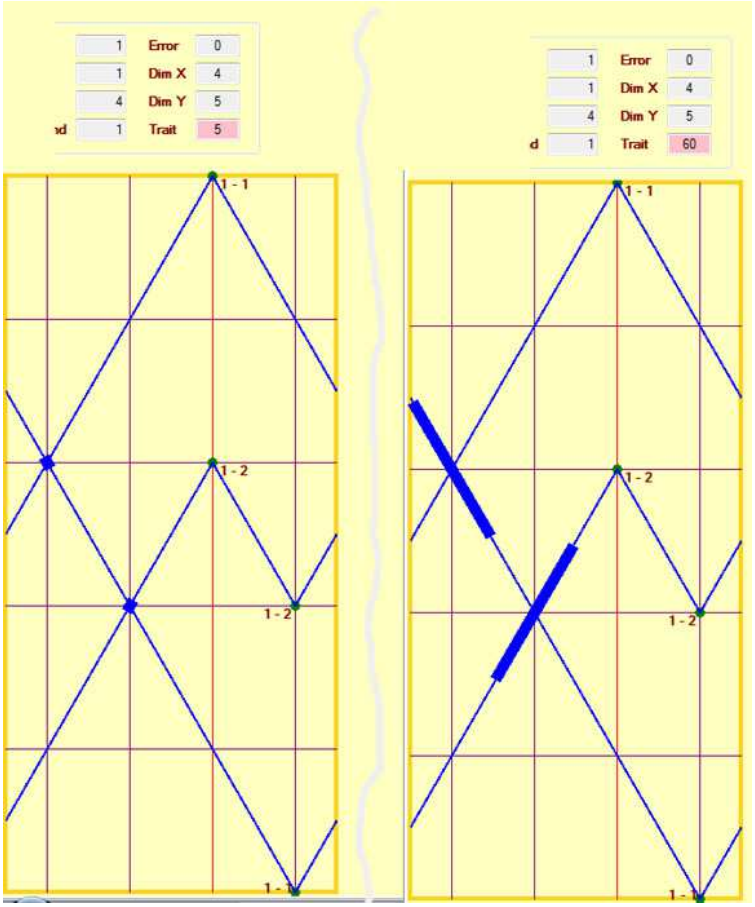
The pixels sizes of the HP lines (isometric tracing) and the **FONT** size are now integrated in the **CONTEXTUAL MENU** (right mouse click in the tracing area)

A reminder about **CONFIGURATION**:

A change in language will be taken in account only after closing ARIANE and opening it again.

All other modifications are acted upon immediately inside the same session.

When you close the Configuration panel using the **OK button** the configuration is immediately refreshed, when you close it using the **CANCEL button** or the **'X' icon** at the top right corner this refreshing does not happen.



CONTEXTUAL MENU now offers:
*** The choice of the width of the Half-Periods tracing

*** The choice of the crossings width

*** The **Save knot in TXT** is now **Save in ARIane file format**

***** Copy** still makes a copy of the grid that can be pasted in an image editing software

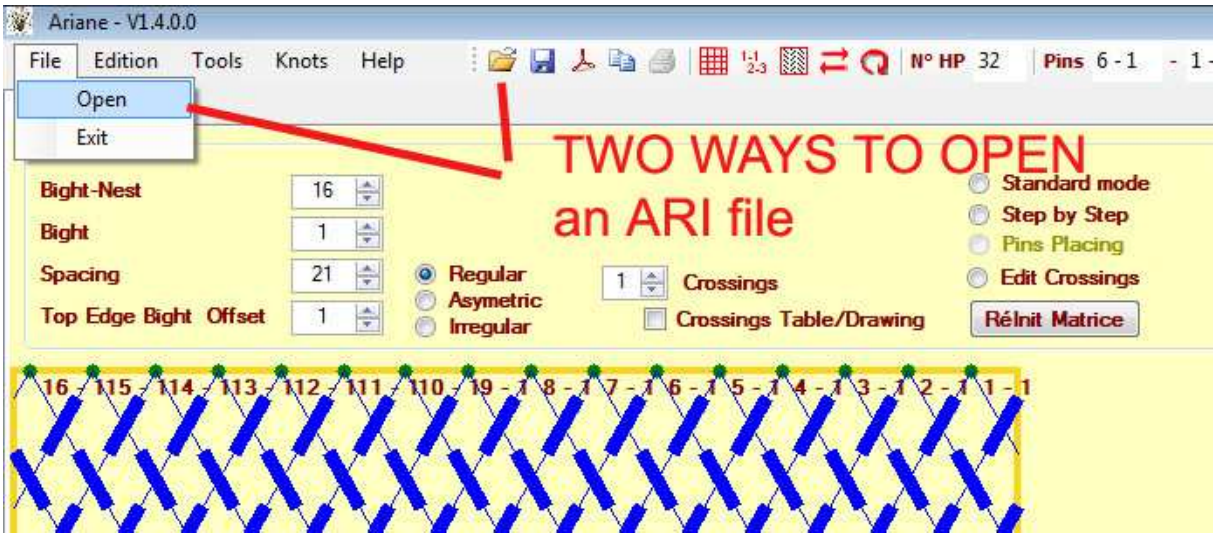
*** **Font** changes the size of the Bight-Rim/Bight PINS numbering on the grid

Crossings can also have their length changed :
A **LEFT** mouse click on the diagram activates the mouse wheel, a *second* **LEFT** mouse click on the diagram deactivates the mouse wheel.

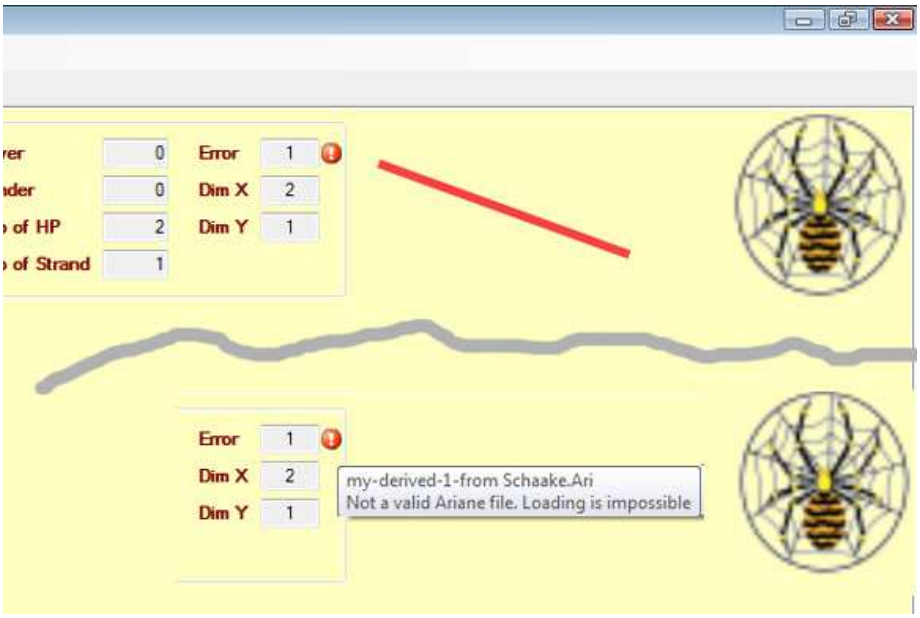
*** ARI(ane) Files

Once a knot has been saved as **ARIANE file** (don't forget to set the correct path in the **CONFIGURATION** panel) it may be loaded again in ARIANE.

There are several manners to do that loading : **menu FILE** or **ICON**



When attempting to open (load) an **ARI file** if this file is not fully complying with the ARI format you will get a warning  : make the mouse marker hovers over this exclamation mark and a contextual message will open.



In case of "error" please look in your ARIANE installation folder and look for a file

Erreur.TXT: please send it to Claude HOCHETat arianerecouvrement@gmail.com

THE MAIN ADDITION IN ARIANE RELEASE VERSION V2 IS

THE ABILITY TO EDIT THE CROSSINGS

You just need to have a knot on the screen, either by loading an existing **ARI file**, or by drawing the knot automatically with ARIANE, using the fields in the upper left corner of the windows FOLLOWED BY THE ACTIVATION OF THE **EDIT CROSSINGS** RADIO BUTTON TO GO INTO THIS MODE.

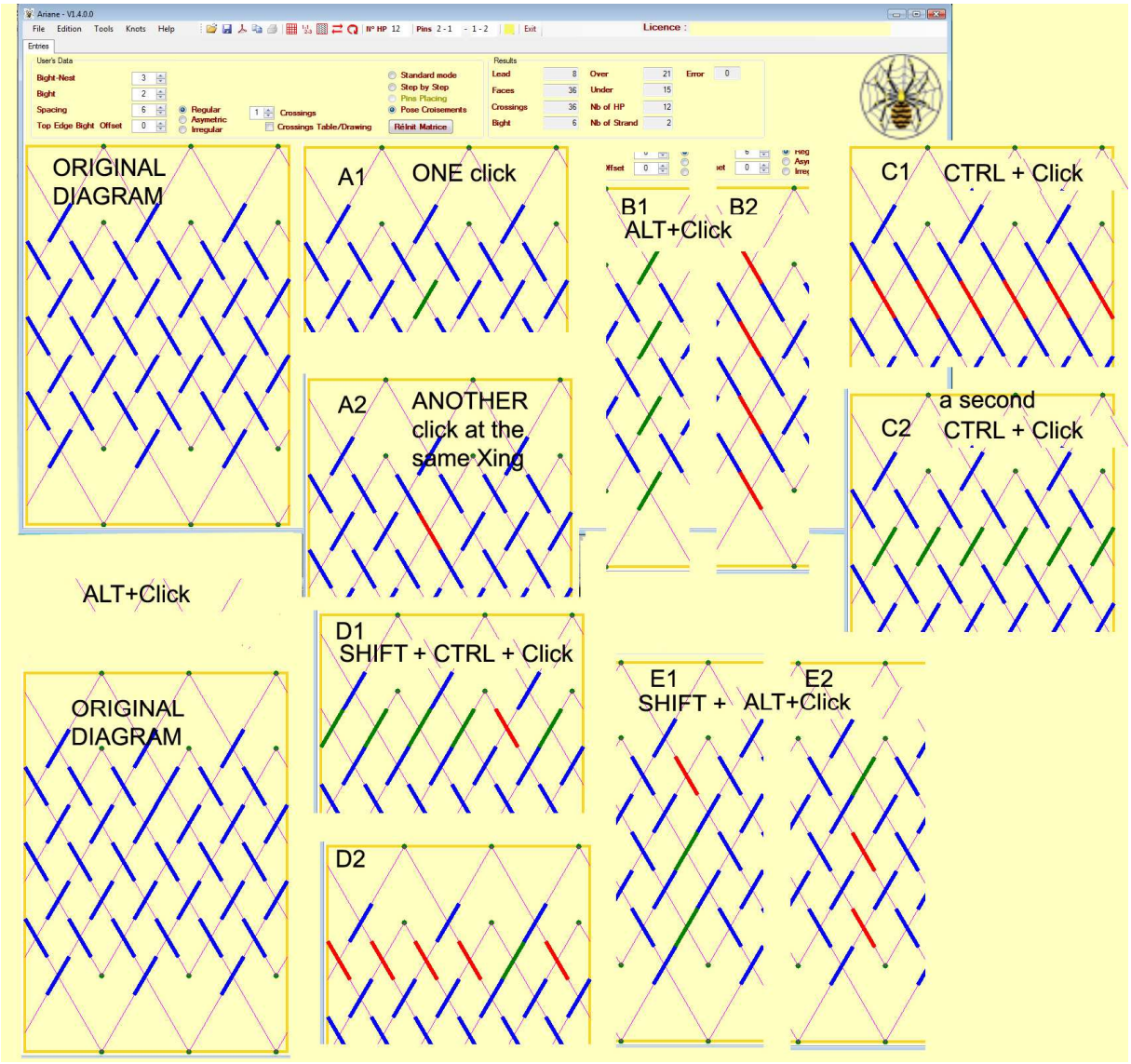
Proper treatment of the crossing in all cases: it is now possible to modify the type of the crossings « by hand »' just as in RKnot Builder.

IT GOES WITHOUT SAYING THAT PRIOR TO MAKING THE KEYBOARD AND/OR MOUSE CLICK THE MOUSE MUST BE POSITIONED ON A CROSSING OF HALF-PERIOD.

- Any crossing can be changed into the other type with a **Click on it**
- A whole **COLUMN** (vertical cylinder frame of reference) will get **homogenous** crossings of the same type using **ALT + Click on any of the crossings in it**
- A whole **ROW** (vertical cylinder frame of reference) will get homogenous crossings of the same type using **CTRL + Click on any of the crossings in it**
- Starting from their existing type the crossings of a whole **COLUMN** will be put into the other type so you can get **heterogeneous COLUMN** with a mix of **Over** and **Under** and not **ONLY UNDER** or **ONLY OVER (it is an inversion of state)** using **ALT** + **SHIFT** + **Click on any of the crossings in it**
- Starting from their existing type the crossing of a whole **ROW** will be put into the other type so you can get **heterogeneous ROW** with a mix of **Over** and **Under** and not **ONLY UNDER** or **ONLY OVER it is an inversion of state)** using **CTRL** + **SHIFT** + **Click on any of the crossings in it**

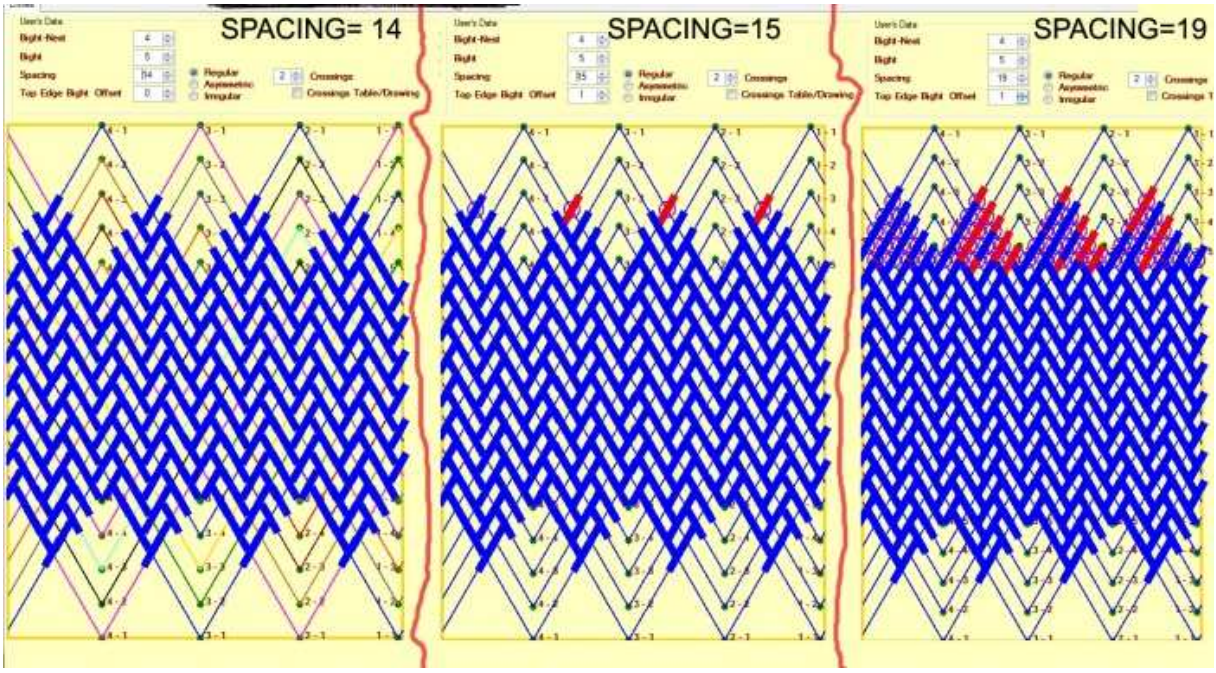
The illustration here under is a VISUAL composition of a number of screen captures put in a patchwork showing the changes brought with keyboard and mouse

Such thing as D1 or C2 are JUST 'labels' and *not* things to 'do', they just serve as 'coupling' for the two faces of a same sort of tweaking.



STILL ABOUT CROSSINGS : when modifying the **SPACING** parameter the knot is usually redrawn using as much as possible of the existing crossings pattern and the added crossing that MAY be are not complying with the original pattern are flagged by a circle.

Circle will disappear when you click on the crossing in **EDIT CROSSINGS** mode.



THE FUTURE : THE V3

Already and for many months, **V3** has been working perfectly well in Claude's hands and in his tester's hand but this **V3** is, for the moment, way beyond too many knot-tyers to be reasonably release now.

Using the **V3** **demands** an **IN DEPTH** knowledge of **IRREGULAR NESTED-BIGHT CYLINDRICAL KNOTS** that can **ONLY** be gained by thoroughly reading and studying *THE* ***BRAIDER.***

For now the **V2**, a real progress, is a big enough plate to digest for 99.999% of the knot tyers and till they master it perfectly a V3 would more hindrance than help for them.