

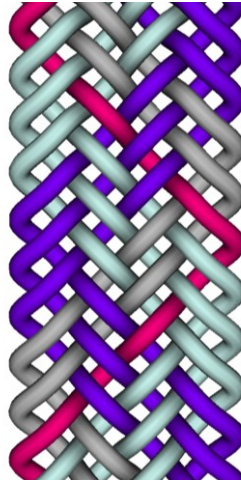
Prof. Dr.-Ing. habil. Yordan Kyosev

Carrier occupation and braid design

Worksheets, Second Edition

Klöppelbesetzung und Flechtmusterung

Arbeitsblätter, Zweite Ausgabe





Autor: Prof. Dr.-Ing. habil Yordan Kyosev

Carrier occupation and braid design, Worksheets
Klöppelbesetzung und Flechtmusterung, Arbeitsblätter

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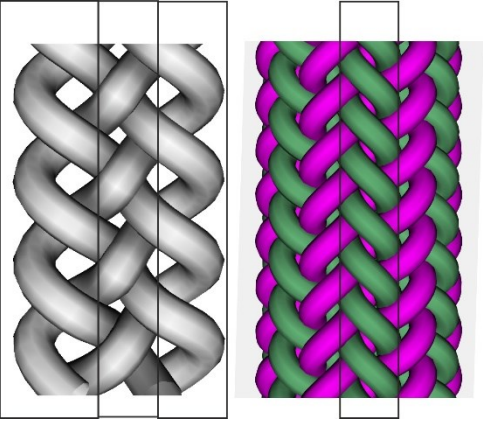
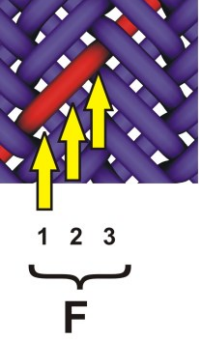
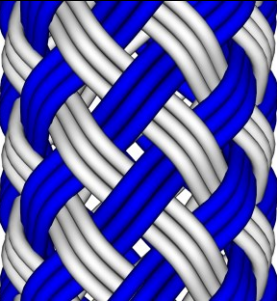
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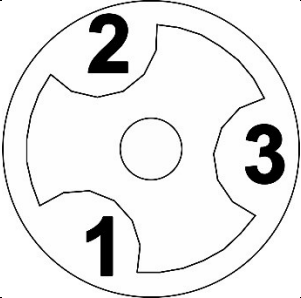
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1. Begriffe / Terminology.

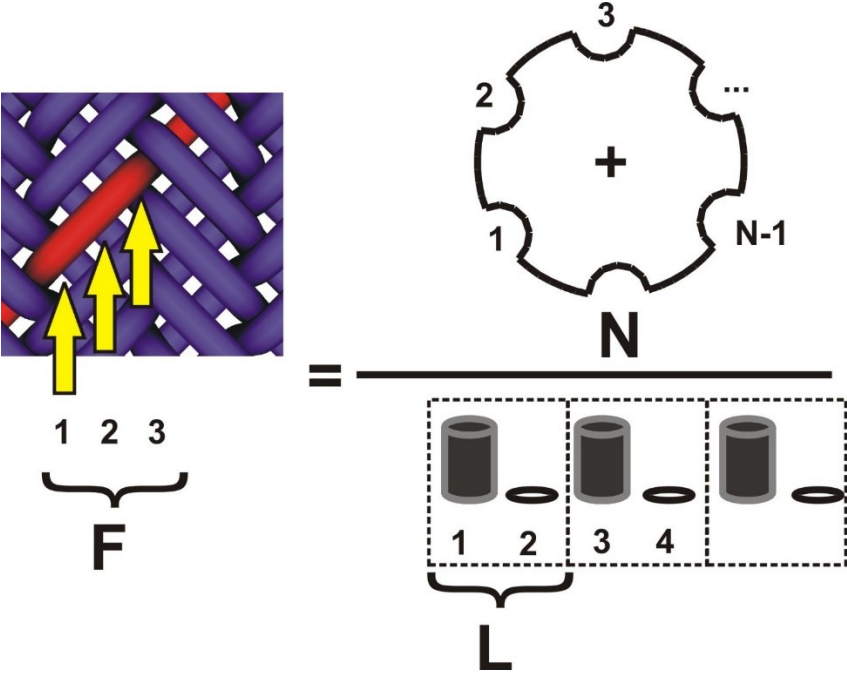
<p>Warengrat / Ridge</p> <p>Visuell erkennbare Streifen, gebildet aus – gleich lang sichtbare, parallel geordnete Faden- oder Drahtstücke</p> <p>Visual recognizable Stripe, build from equal long visible parallel arranged Yarn (wire) pieceses</p>	
<p>Flechtigkeit / Floating length</p> <p>Die Anzahl der Fäden über (unter) denen einen Faden in einem Warengrat flotiirt/überkreuzt</p> <p>The number of the yarns over (under) which one yarn floats (crosses) within one ridge</p>	
<p>Fädigkeit / Yarns in a group</p> <p>Anzahl Fäden die einem Strang bilden und zusammen alle Überkreuzungen durchlaufen</p> <p>Number Yarns, which build one strand or group and which all together are crossing other groups</p>	

<p>Flügelrad Hier mit drei Einschnitte</p> <p>Horngear Here with 3 Slots</p>	
<p>Klöppelbesetzungsrapport</p> <p>Repeat of the carrier arrangement</p>	<p>Die Länge in „Anzahl Einschnitte“ der kürzeste sich wiederholende Sequenz von mit Klöppeln besetzten und freien Einschnitten entlang einer Laufbahn. z.B. 1 Voll 1 Leer ergibt Rapportlänge 1+1=2</p> <p>The length in „number of slots“ of the shortest repeatable sequence of with carriers occupied and free of carriers slots alongside of one track. For instance 1 Full 1 Empty give Repeat of 1+1=2</p>

2 Flechtigkeit allgemein / Floating length in general case

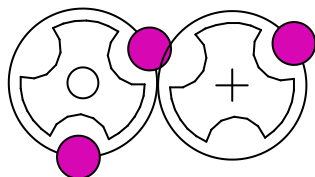
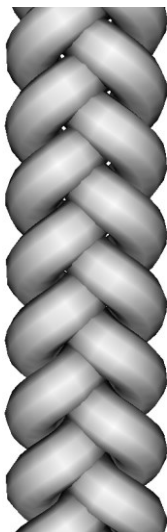
Hauptformel der Flechtmusterung

Main equation for the patterning of briads



3. Beispiele Einflechtig Flach / Examples Floating length of one.

Warengrate und Flügelräder / Ridges and Horn gears



Task 3a

Anzahl Fäden / Number Yarns

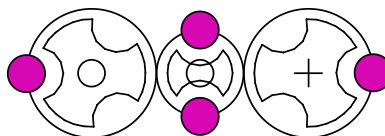
Anzahl Warengrate/Number Ridges

Anzahl Flügelräder/Number Horn gears

Flechtigkeit/Floating length 1

Fädigkeit / Yarns in a group

Besetzungsrapport


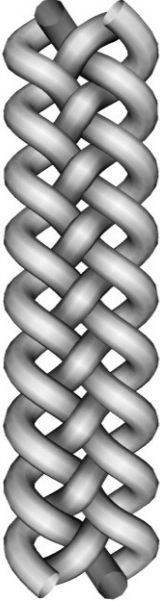
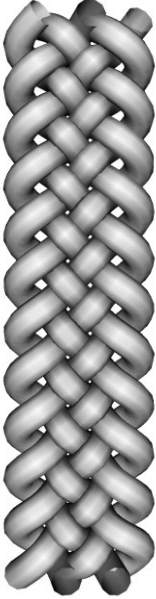
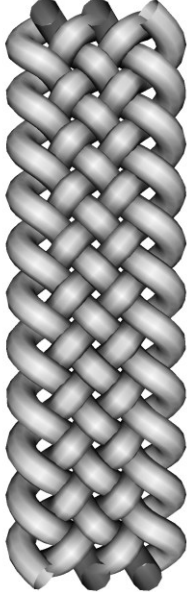


Task 3b.

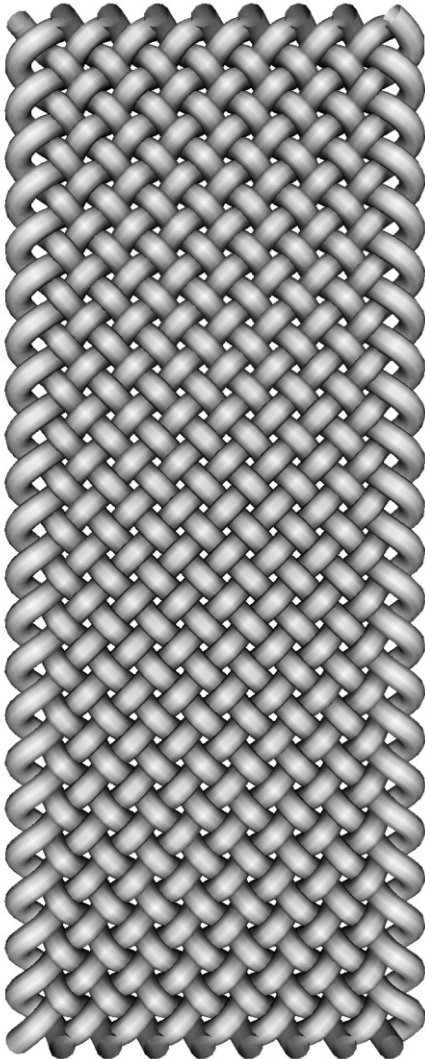
4. Flachlitzen /Flat braids

Bestimmen Sie die Anzahl Fäden, Warengrate, benötigte Flügelräder, Flechtigkeit und Fädigkeit dieser Geflechte

Determine the number yarns, ridges, required horn gears, floating length and the yarns in a group of these braids:

			
Task 4a	Task 4b	Task 4c	Task 4d

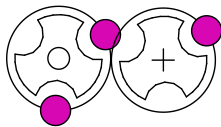
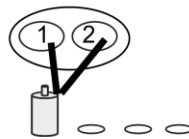
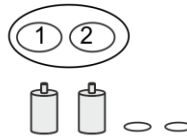
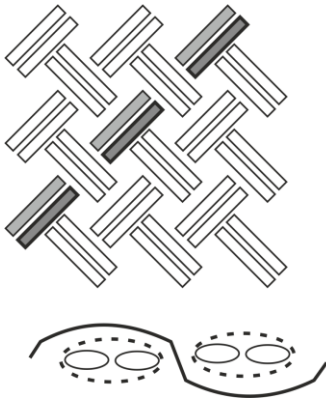
Task 4e



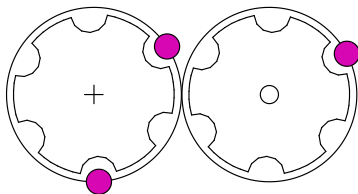
5. Fädigkeit / Yarns in a group

Die Fädigkeit kann durch die Klöppelbesetzung (Einsatz von mehreren Klöppeln nacheinander) oder durch die Fachung von Garne auf einem Klöppel erreicht werden

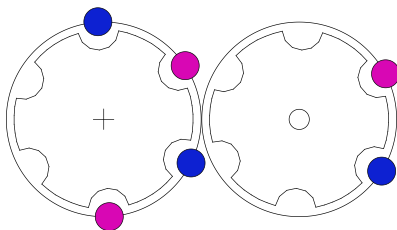
The yarns in a group can be determined through the carrier arrangement (placing more carriers one after another) or using ply yarns on one carrier.



Task 5a



Task 5b

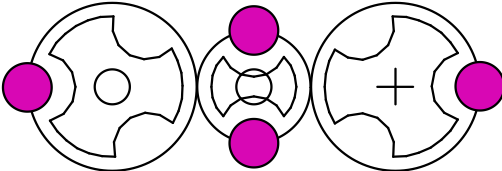


Task 5c

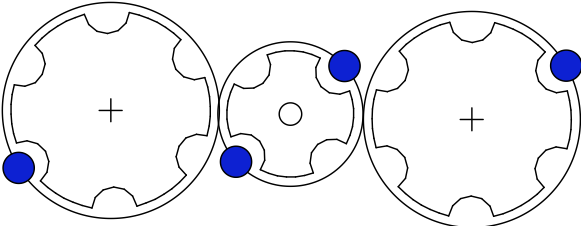


Maschinenentwicklung von 1 Fädig zu 2 Fädig

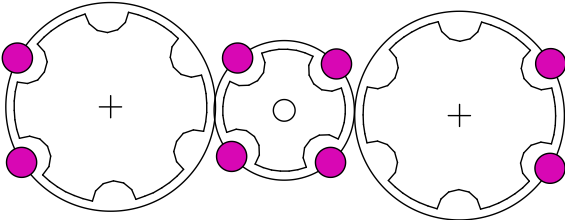
Machine development from floating length of one to floating length of two



Task 5d



Task 5e

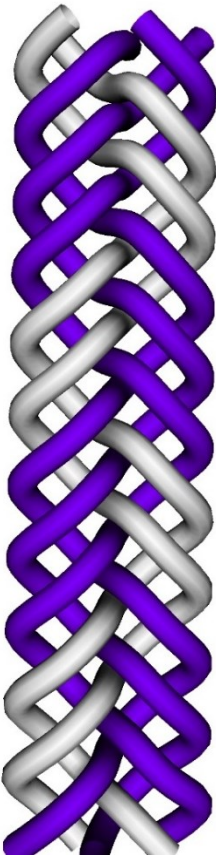
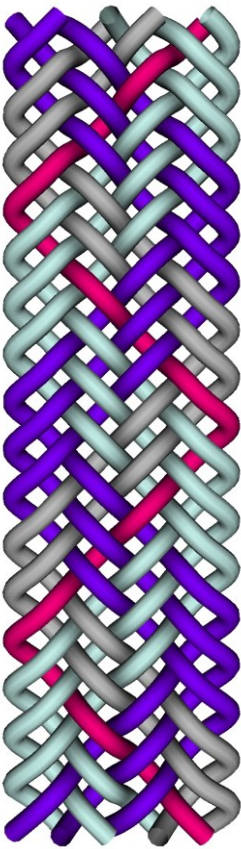


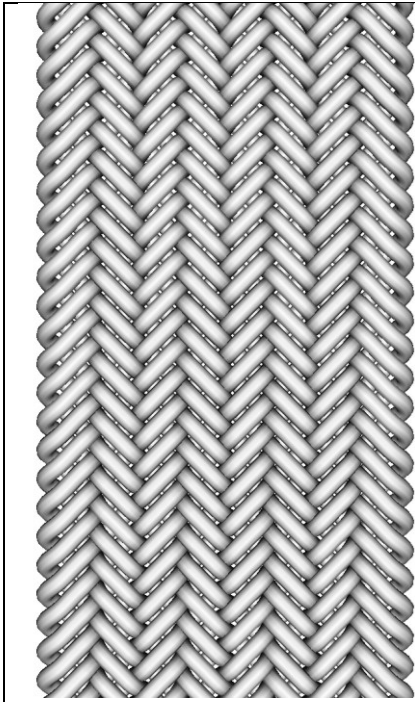
Task 5f

6 Zweiflechtig / Floating length of two

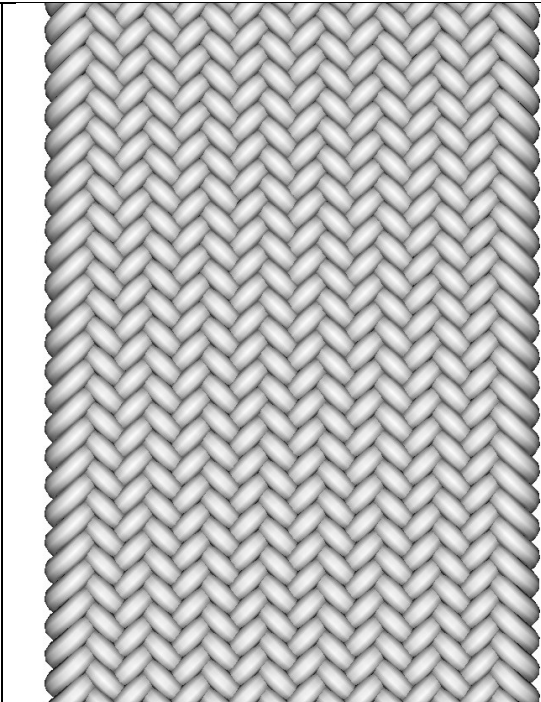
Bestimmen Sie die Anzahl Fäden, Warengate, benötigte Flügelräder, Flechtigkeit und Fädigkeit dieser Geflechte

Determine the number yarns, ridges, required horn gears, floating length and the yarns in a group of these braids

	
Task 6a	Task 6b

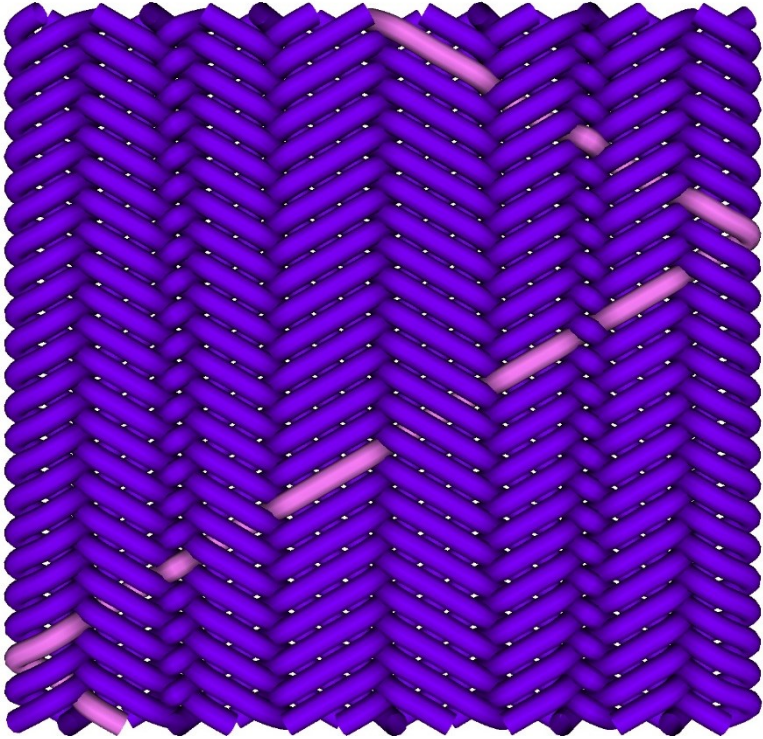


Task 6c

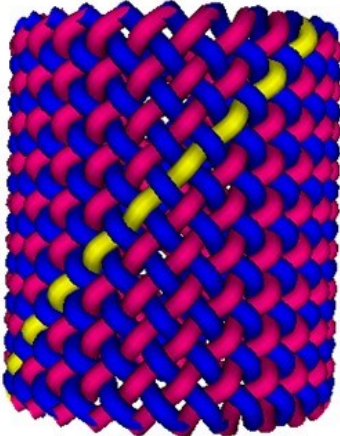


Task 6d

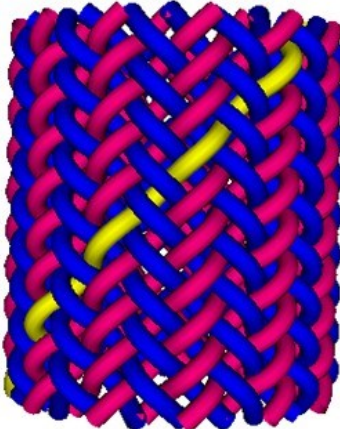
Task 6e



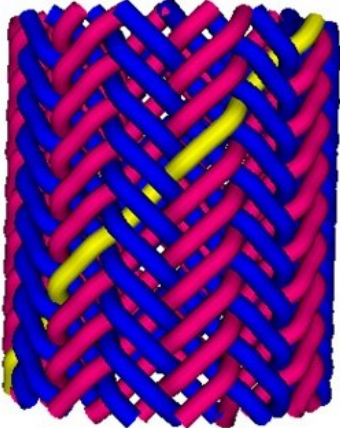
7. Rundgeflechte / Tubular braids



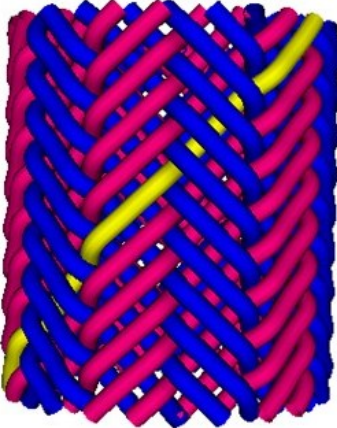
Task 7a



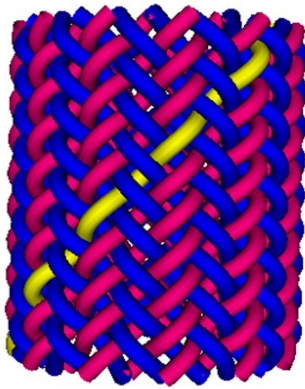
Task 7b



Task 7c



Task 7d

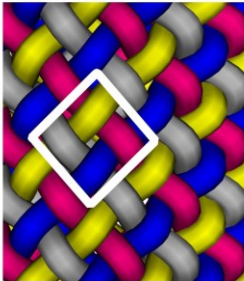
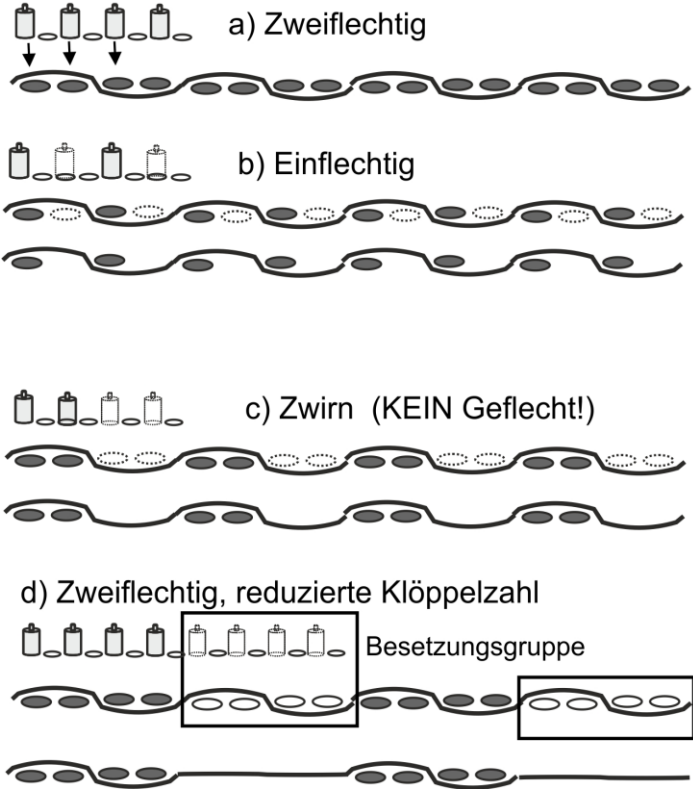


Task 7e

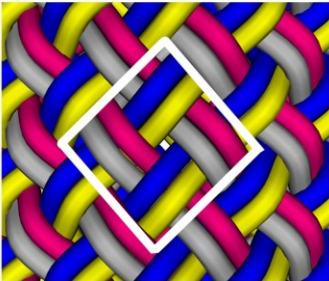


Task 7f

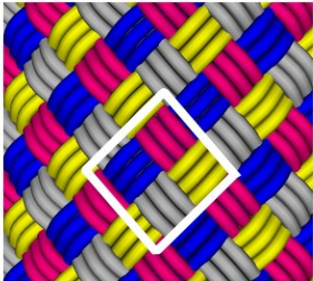
8. Fehlspulen / Partial occupation



1:1-1
2x2

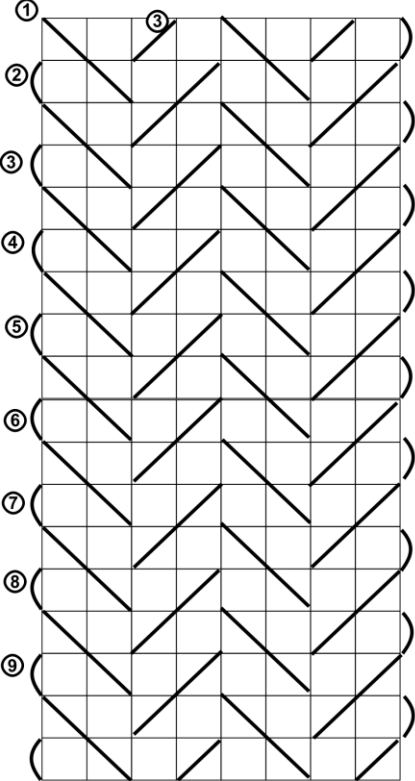
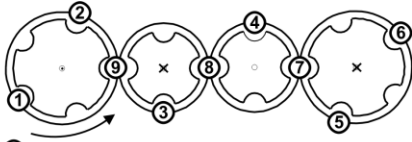
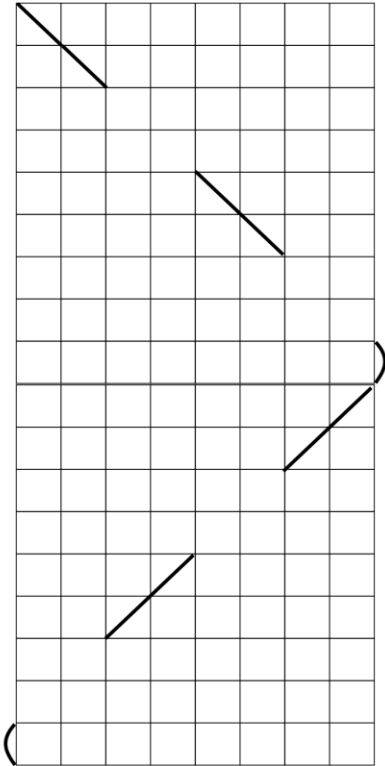
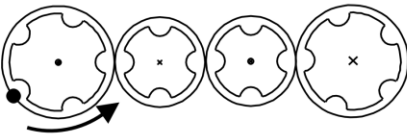


1:1-2
4x4

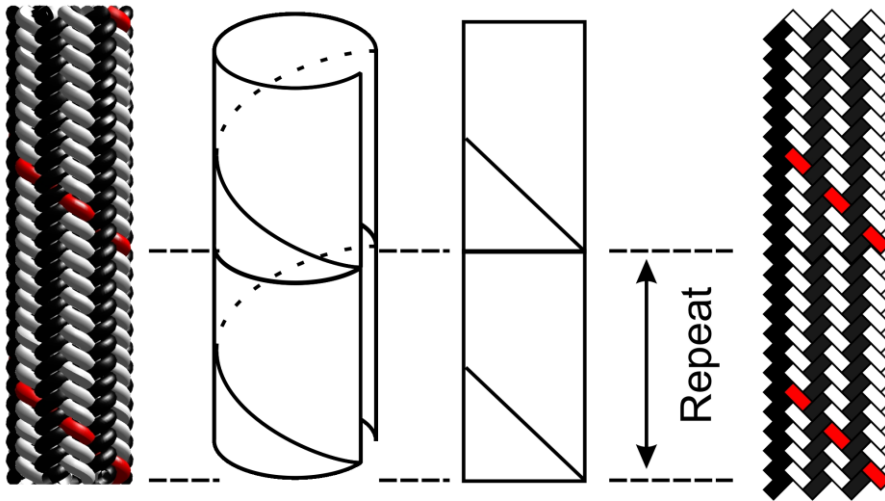


1:1-3
6x6

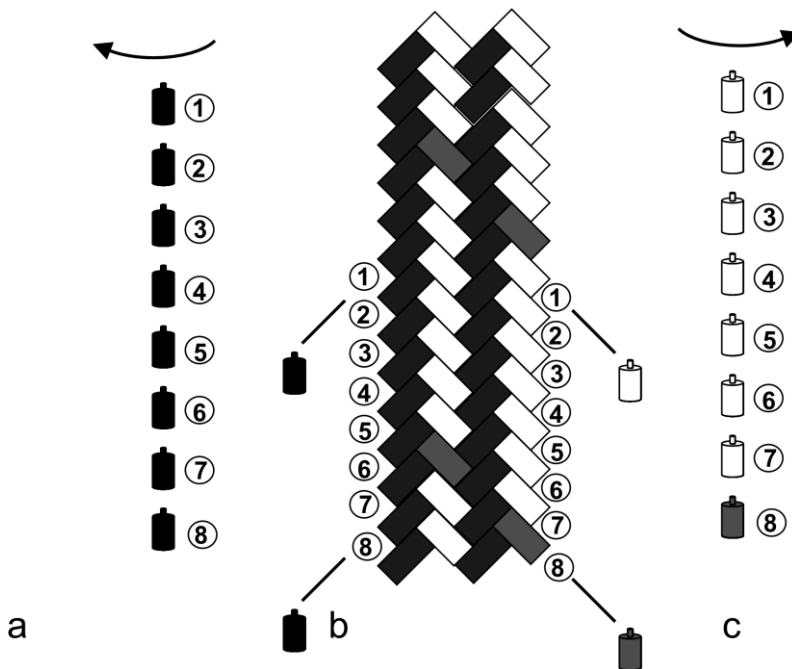
9. Strukturzeichnungen/ Structural drawing



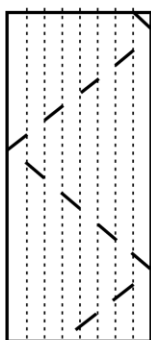
10. Farbmusterung / Colour Design



(Source: Kyosev, Y., Braiding technology for textiles, Woodhead Publishing, 2014)



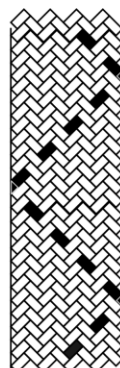
(Source: Kyosev, Y., Braiding technology for textiles, Woodhead Publishing, 2014)



visible part



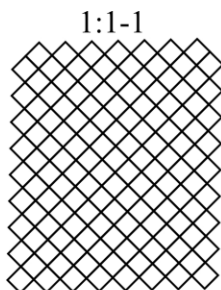
colour pattern



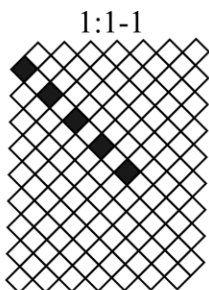
colour pattern
with triangles
at the edges



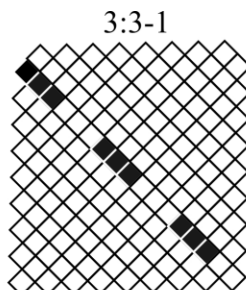
(Source: Kyosev, Y., Braiding technology for textiles, Woodhead Publishing, 2014)



a



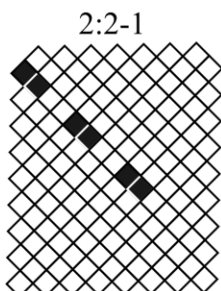
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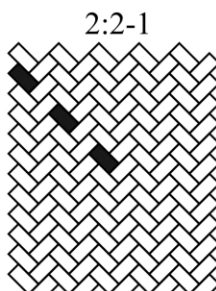
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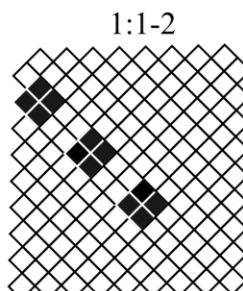
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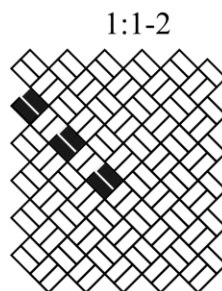
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f



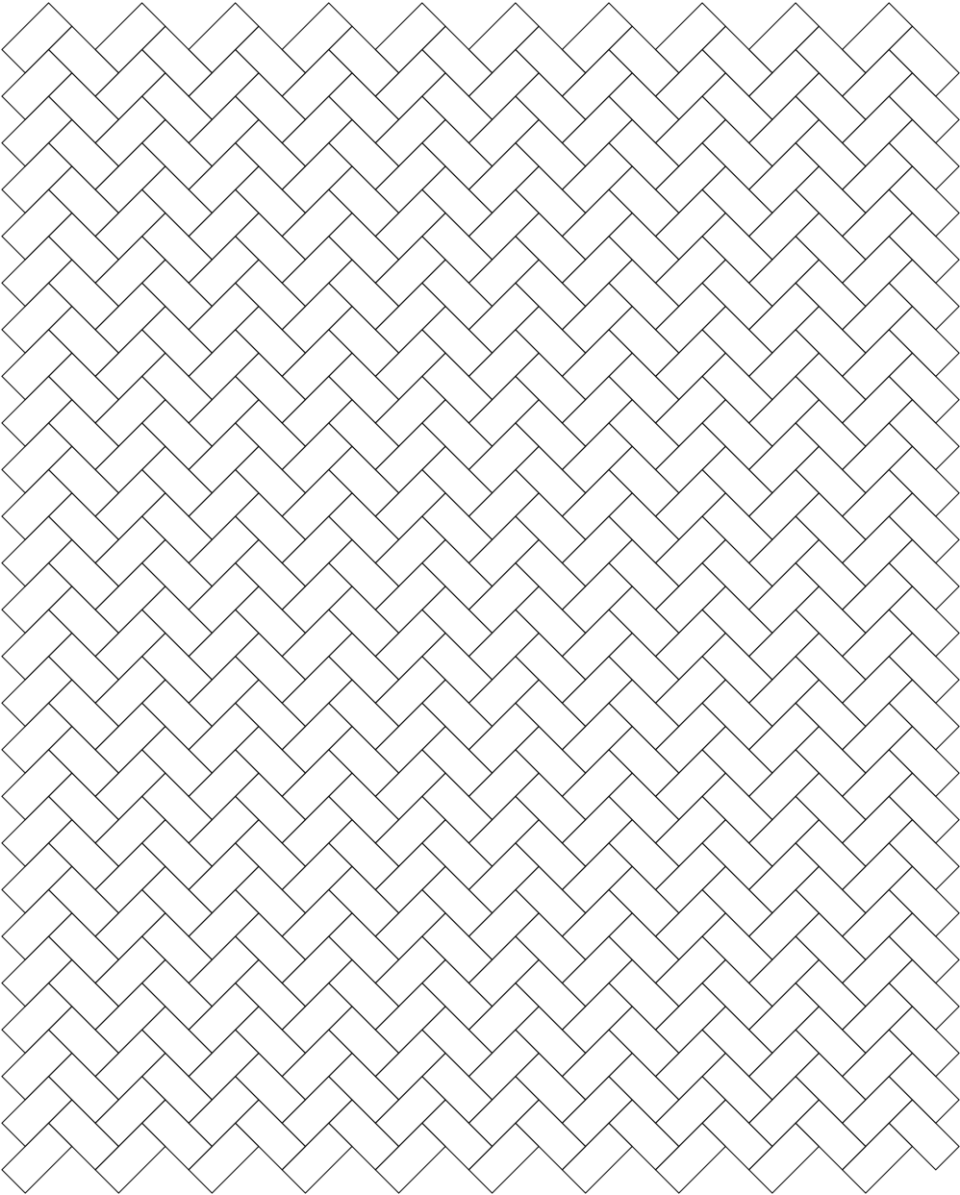
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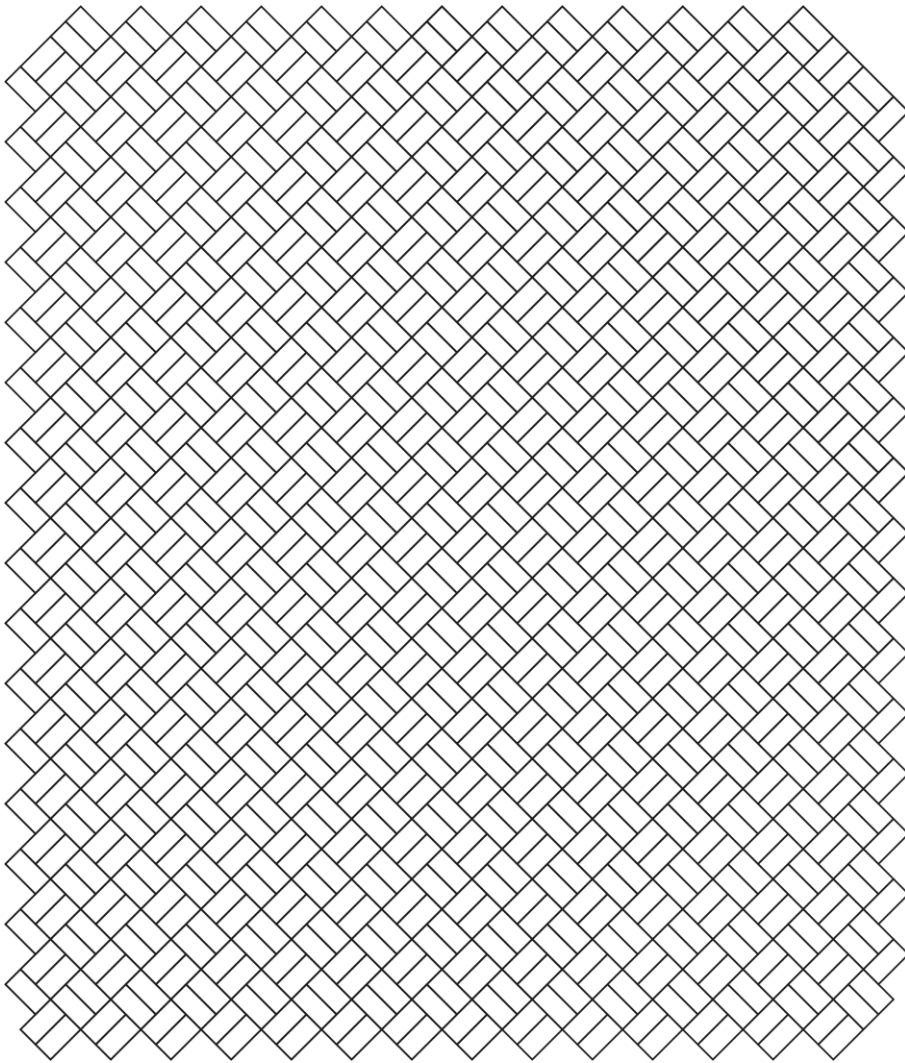


h

Raster für Farbmusterung von Zweiflechtig oder zweifädig einlechtig

Paper for colour design of braids with floating length of two or floating length of one with two yarns in a group





File Edit Help

Generate File Report PDF Xls

Structure Data Yarn and Colour Arrangement X Productivity DeveloperTools

Select Yarn for ALL Groups

Yarn palette Yarns Defined

	Colour	Double click to edit
Y1	1	
Y2	2	
Y3	3	
Y4	4	
Y5	5	
Y6	6	
Y7	7	
Y8	8	

Assigned colours to mouse buttons

LEFT RIGHT

Assign colours

1 to 2 1 to 2 1:1 2:2 4:4 3:3

Yarn Arrangement Yarn Definition

Track Operations Inlay/Middle Ends

	S	Z	Inlays
1	2		1 0
2	2		2 0
3	2		3 0
4	2		4 0
5	2		5 0
6	2		6 0
7	2		7 0
8	2		8 0
9	2		9 0
10	2		10 0
11	2		11 0
12	2		12 0
13	2		13 0
14	2		14 0
15	2		15 0
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19	2		
20	2		
21	2		
22	2		
23	2		
24	2		

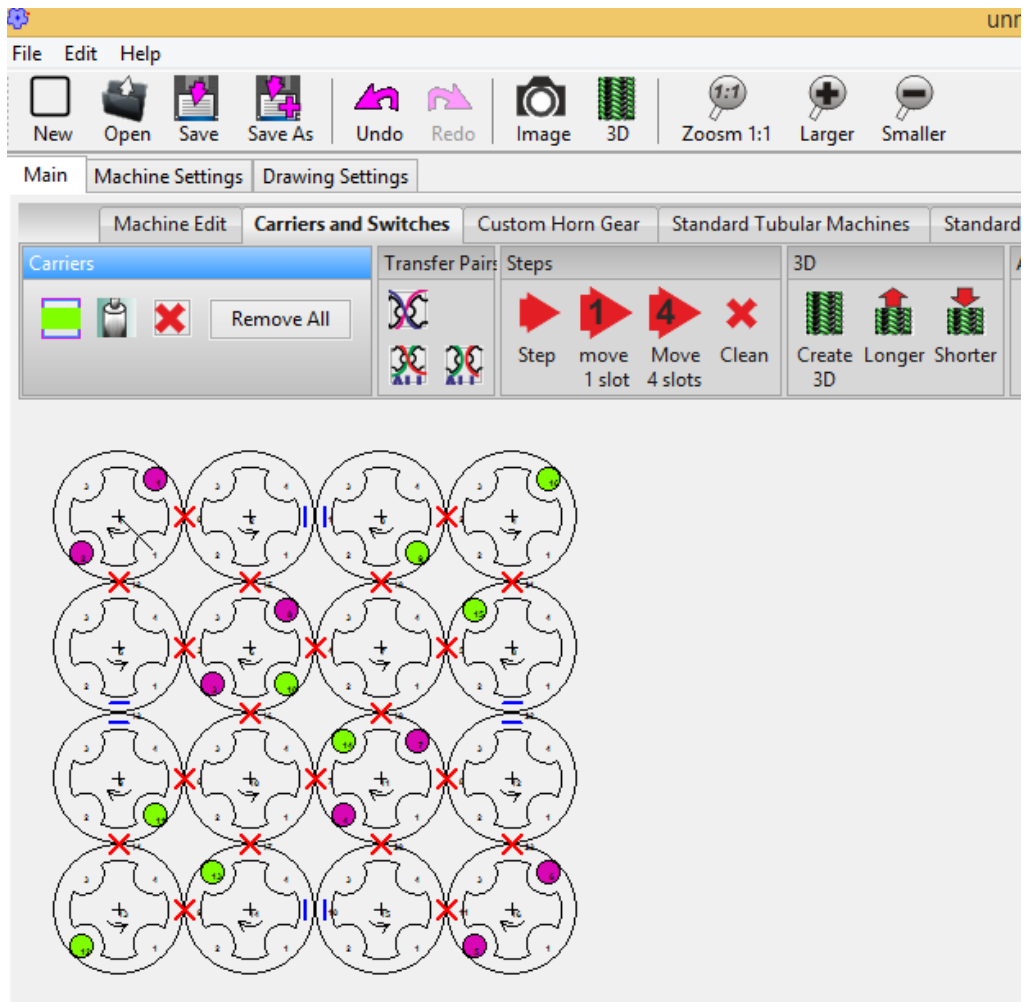
11. Maschinen mit mehreren Bahnen

Machines with multiple tracks

Software

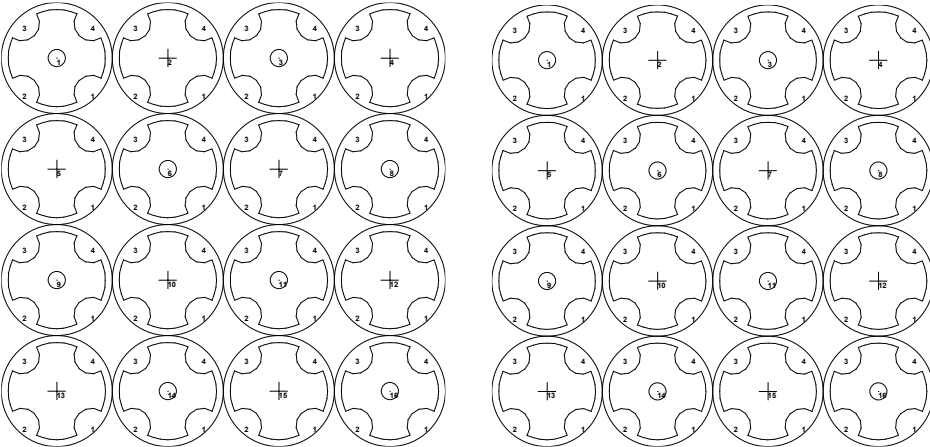
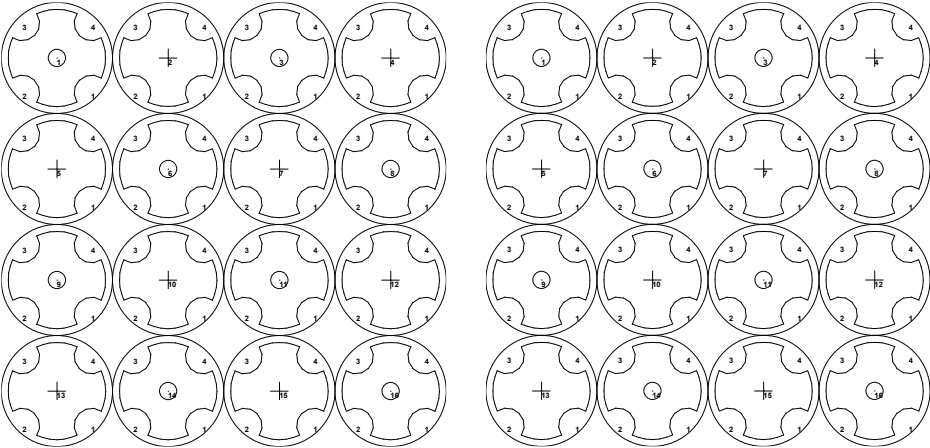
Texmind Braiding Machine Configurator for fixed switches

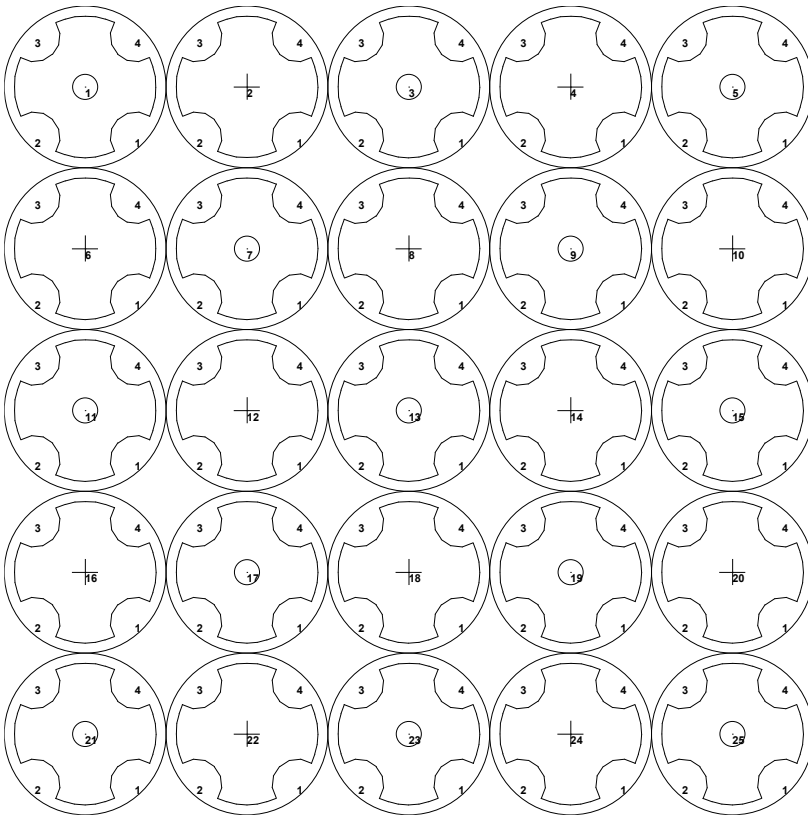
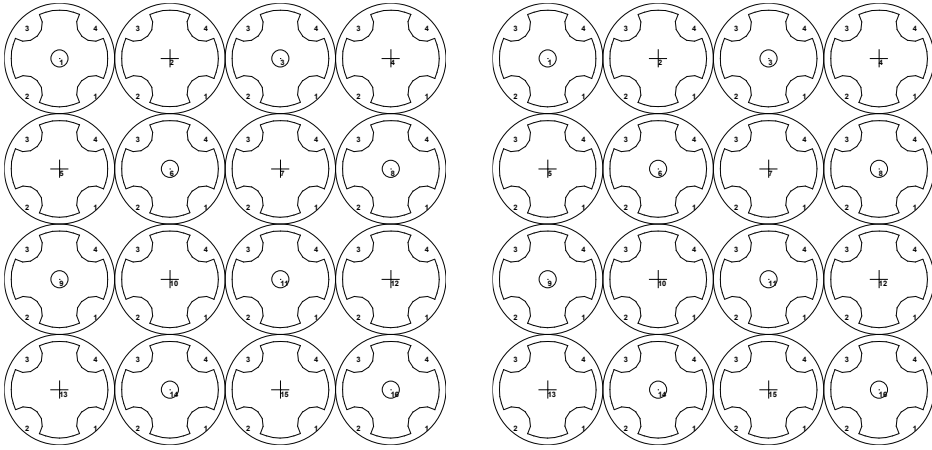
Texmind Computer Controlled Braiding Machine Configurator for computer controlled switches



Sheets for manual trials:

Tasks 1. Draw the tracks 2. Arrange the carriers





11. Verwendete Literatur / Used Literature

Kyosev, Y, Braiding technology for textiles, Woodhead Publishing, 2014

Kyosev, Y., Über die Klöppelbesetzung der Flechtmaschinen und die Struktur der hergestellten Geflechte, Band- und Flechtindustrie, 1, 2015

Kyosev, Y., (Editor) Advances in Braiding Technology - Specialized Techniques and Applications, Woodhead Publishing, 2016

Software: <http://www.texmind.com>

12. Acknowledgment

The initial version of this course materials was extended and adapted for the use under the Erasmus+ Program Key Action 2:

Cooperation for innovation and the exchange of good practices Knowledge Alliance

ICT IN TEXTILE AND CLOTHING HIGHER EDUCATION AND BUSINESS

Project Nr. 612248-EPP-1-2019-1-BG-EPPKA2-KA

by ITM, TU Dresden, in kind cooperation with the company TexMind UG, who provided the software and the publication of the material.

Projekt Web-site: [ICT-TEX.eu](https://www.ict-tex.eu)



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