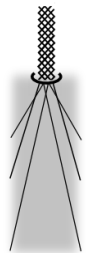


Erste Erfahrungen mit dem Programm TexMind Braider

**Ruth Neumeier
Prof. Dr. Yordan Kyosev**

**Hochschule Niederrhein - University of Applied Sciences,
Mönchengladbach
e-mail: yordan.kyosev@hs-niederrhein.de**



Übersicht

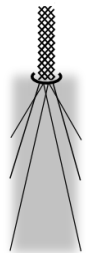
Einführung

Seilberechnungen

Flechtprozess

Computer Simulation

Über die Computersimulation
des Flechtprozesses
und ihre Anwendbarkeit für
Seilberechnungen

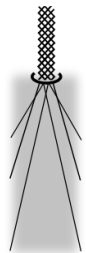


Flechtprozesssimulation

Entwicklung von TexMind Braider

(Seit 2007 ist das die 4 –te Generation Software von Y. Kyosev)

Maschinendefinition Stich Anzahl der Flügelräder / Einschnitte Drehzahl Abzugsgeschwindigkeit	✓
Musterdaten: Klöppelbesetzung Garne	✓
Klöppelbewegungsemulator Basis für geometrisches Model Prüft die Klöppelbesetzung	✓
Klöppeldynamik Längenkompensation Garnabwicklung	in Bearbeitung
Flechtprozess Geflechtbildung Relaxation	Algorithmen vorhanden, Integration in Bearbeitung
Testsimulator Zugprüfungsimulation Biegesimulation	Algorithmen vorhanden, Integration in Bearbeitung



Übersicht

Maschinendefinition

Stich
Anzahl der Flügelräder / Einschnitte
Drehzahl
Abzugsgeschwindigkeit

Musterdaten:

Klöppelbesetzung
Garne

Klöppelbewegungsemulator

Basis für geometrisches Model
Prüft die Klöppelbesetzung

Klöppeldynamik

Längenkompensation
Garnabwicklung

Flechtprozess

Geflechtbildung
Relaxation

Testsimulator

Zugprüfungssimulation
Biegesimulation

a

My Frame

File Help

Open Save As Run 3D

Machine Log Settings

Machine Type: Tubular

Number Horn Gears: 16

Sections per Horn Gear: 4

Take off speed: 4,00000

Machine Stitch: 120,00000

Horn gear slot cut radius: 10,00000

Length (in points): 200

Resolution (points per slot): 10

Remarks

Add Yarn Delete Last Yarn

Yarn Definitions

	Diameter	Colour	Red	Green	Blue
1	2,2		3	100	200
2	2,2		200	50	50

Arrangement Convert Tools

Carrier Arrangement

	Carrier Arrangement
Track 1	1 0 1 0
Track 2	1 0 1 0

Colour Arrangement for the occupied carriers

	Colour Arrangement
Track 1	1 1 1 1
Track 2	1 2 1 1

b

Konfigurator für klassische Geflechte

My Frame

File Help

Open Save As Run 3D

Machine Log Settings

Machine Type: Tubular

Number Horn Gears: 8

Sections per Horn Gear: 4

Take off speed: 10,00000

Machine Stitch: 120,00000

Horn gear slot cut radius: 10,00000

Length (in points): 100

Resolution (points per slot): 10

Remarks: Tubular

Add Yarn Delete Last Yarn

Yarn Definitions

	Diameter	Colour	Red	Green	Blue
1	0,400000		3	100	100
2	0,400000		200	4	4

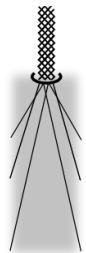
Arrangement Convert Tools

Carrier Arrangement

	Carrier Arrangement
Track 1	1 0 1 0
Track 2	1 0 1 0

Colour Arrangement for the occupied carriers

	Colour Arrangement
Track 1	1 1
Track 2	2 2



Konfigurator für benutzerdefinierte Maschinen

My Frame

File Help

Machine **Horn Gears** x TransferPlaces Carrier Arrangements

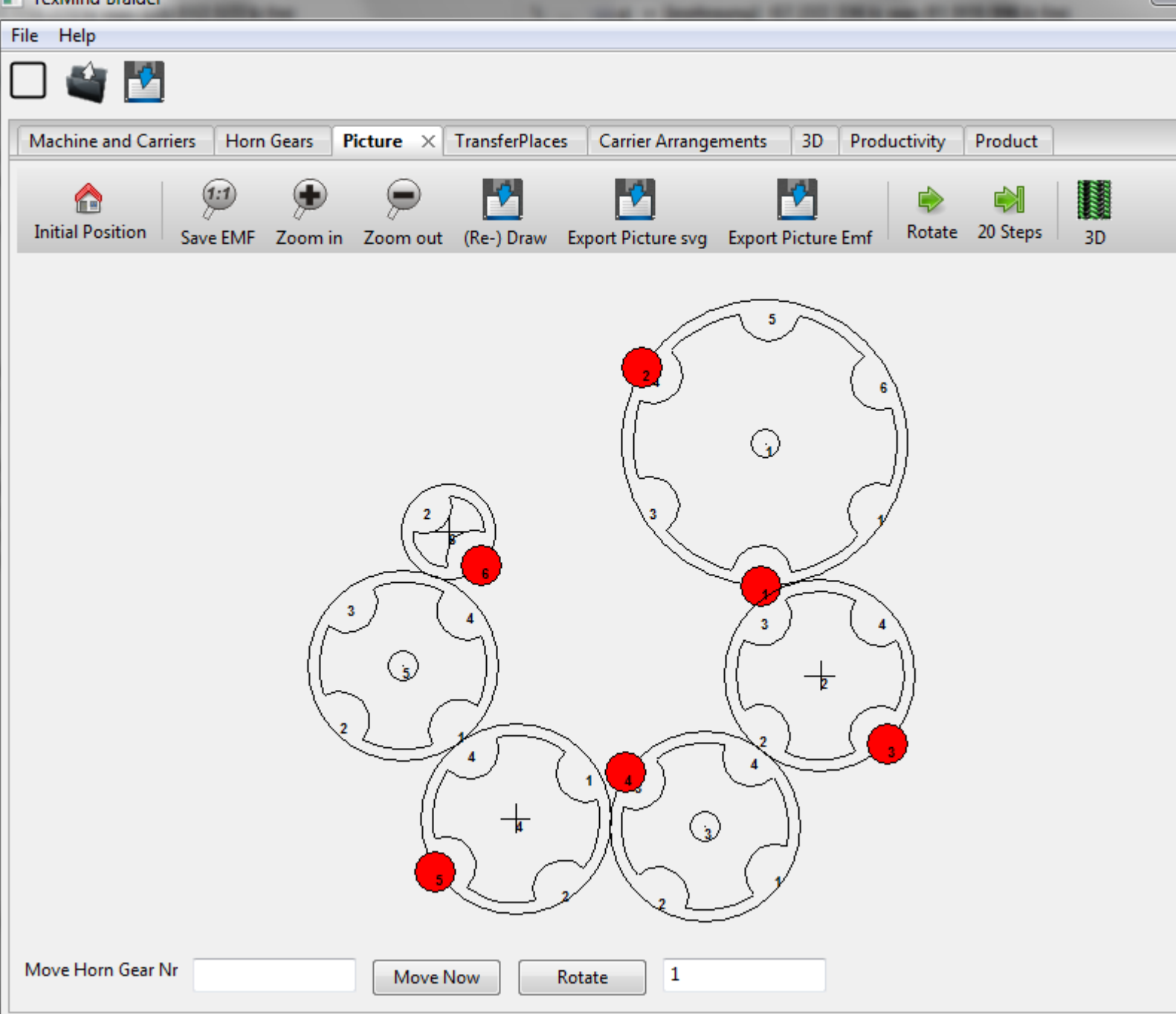
	Slots	Radius	coord xc	coord yc	direction	start angle
1	4	40,00	40	40	0	0
2	4	40,00	120	40	0	0
3	4	40,00	200	40	0	0
4	4	40,00	280	40	0	0
5	4	40,00	40	120	0	0
6	4	40,00	120	120	0	0
7	4	40,00	200	120	0	0
8	4	40,00	280	120	0	0
9	4	40,00	40	200	0	0
10	4	40,00	120	200	0	0
11	4	40,00	200	200	0	0
12	4	40,00	280	200	0 </td <td>0</td>	0
13	4	40,00	40	280	0	0
14	4	40,00	120	280	0	0
15	4	40,00	200	280	0	0
16	4	40,00	280	280	0	0

Add Delete Save Duplicate

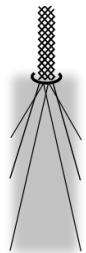
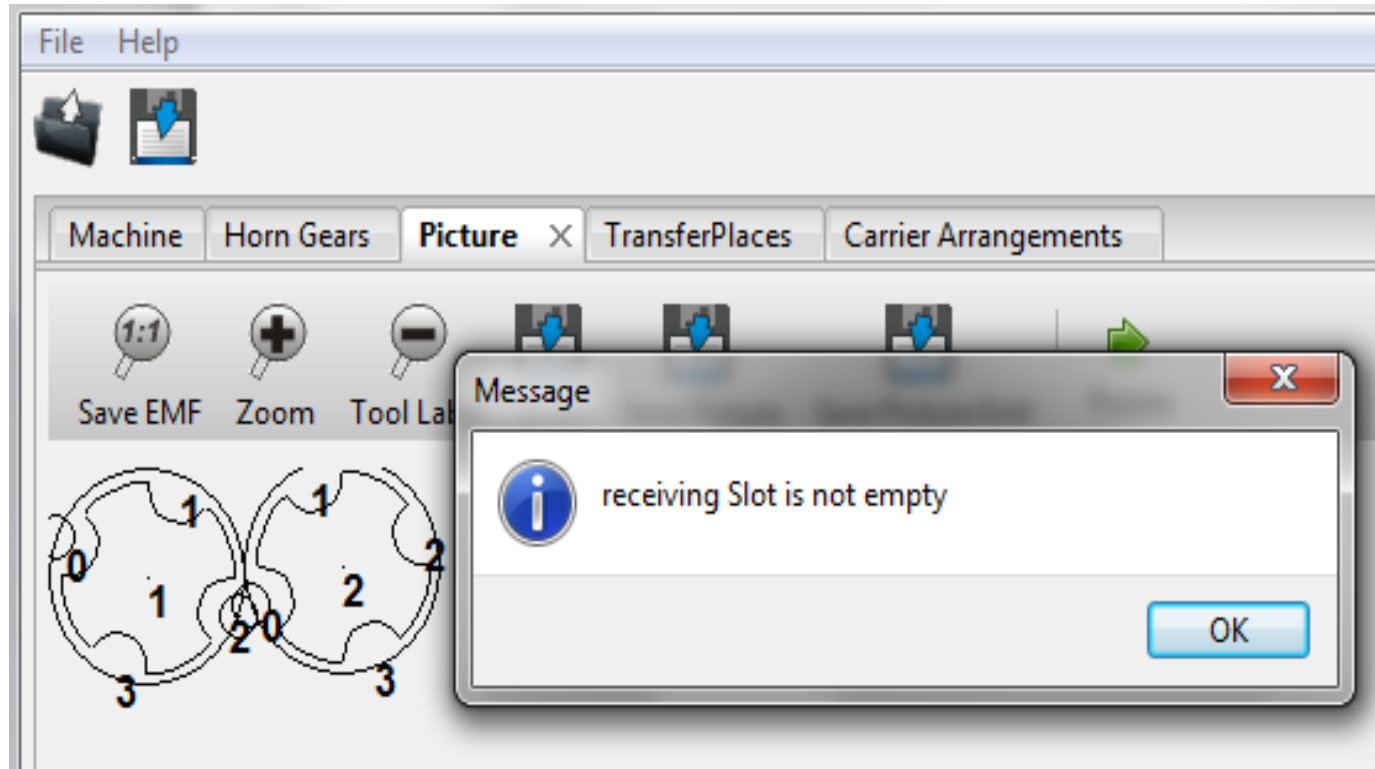
Picture x

1:1 + - Draw Save Picture

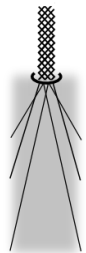
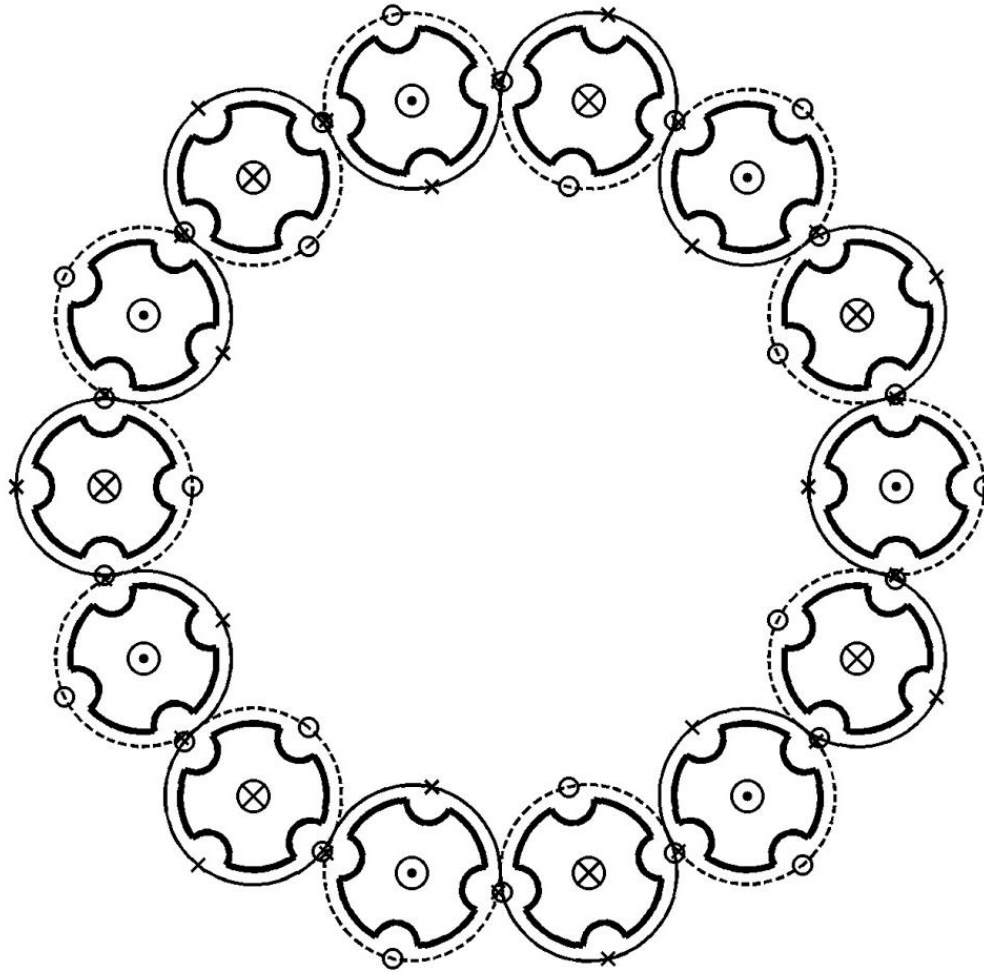
1



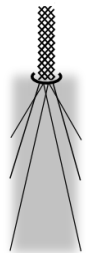
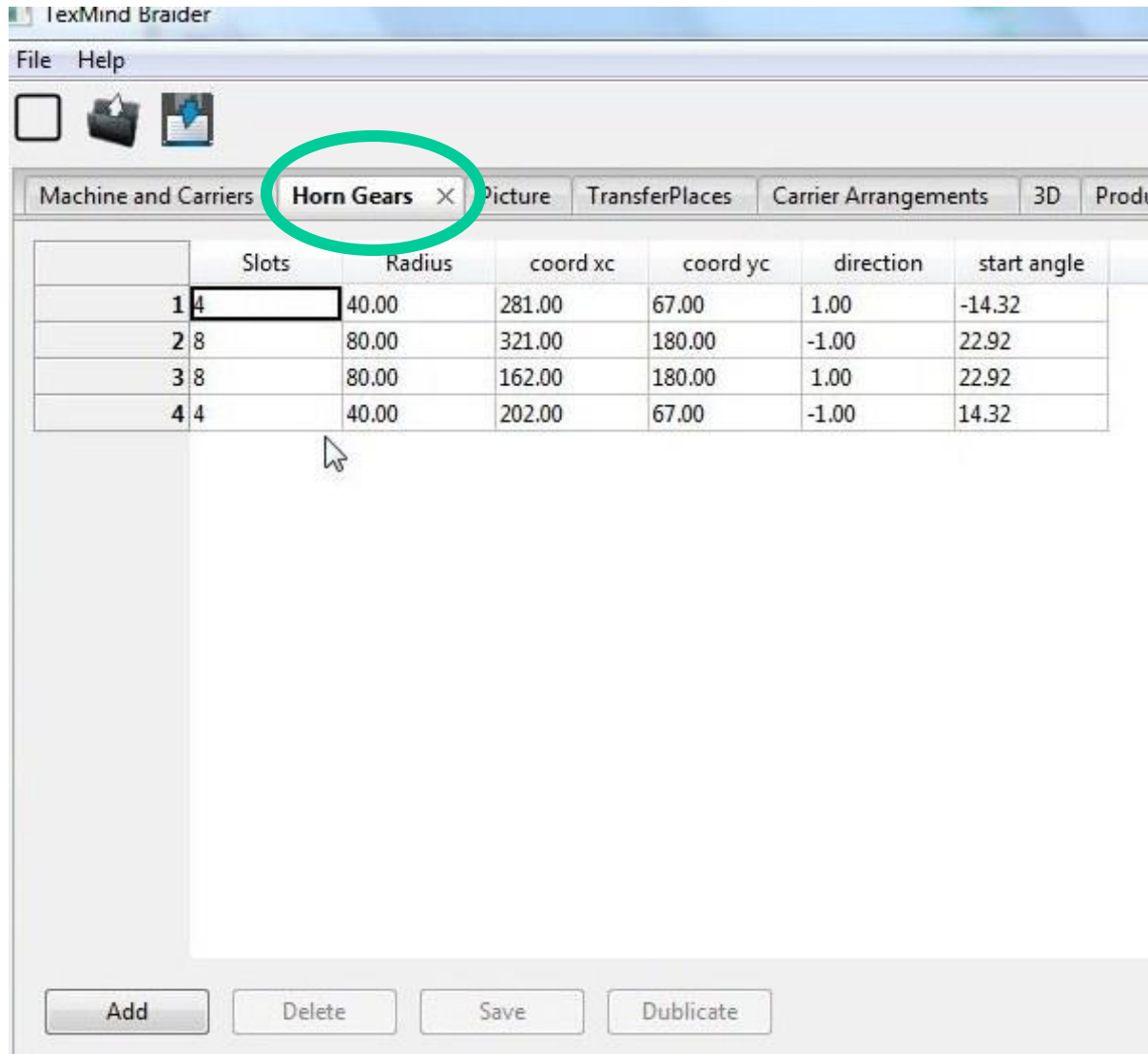
Überprüfung der Klöppelbesetzung



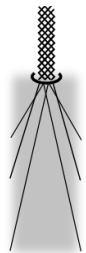
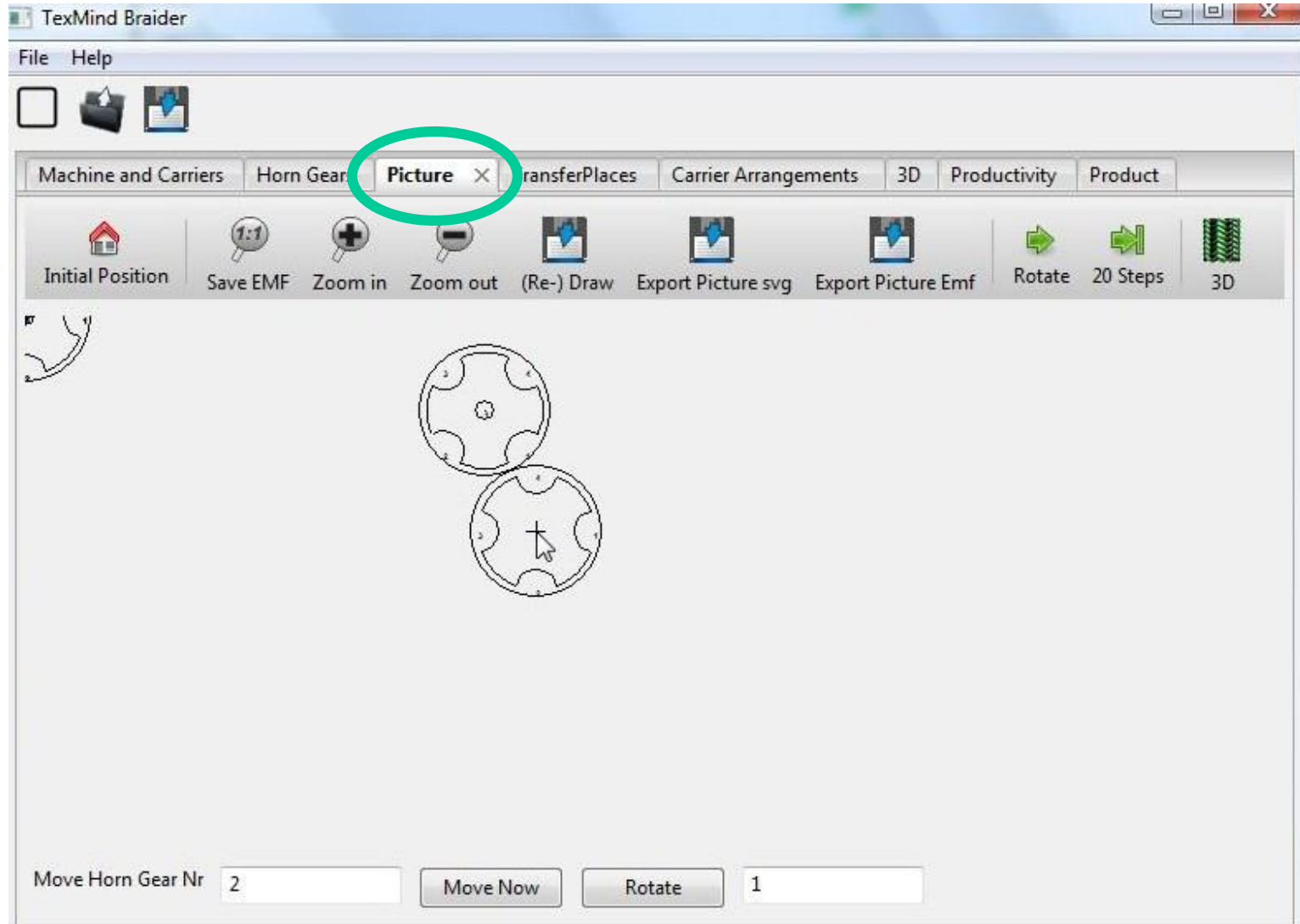
Rundflechtmaschine



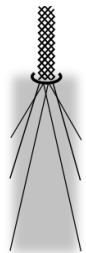
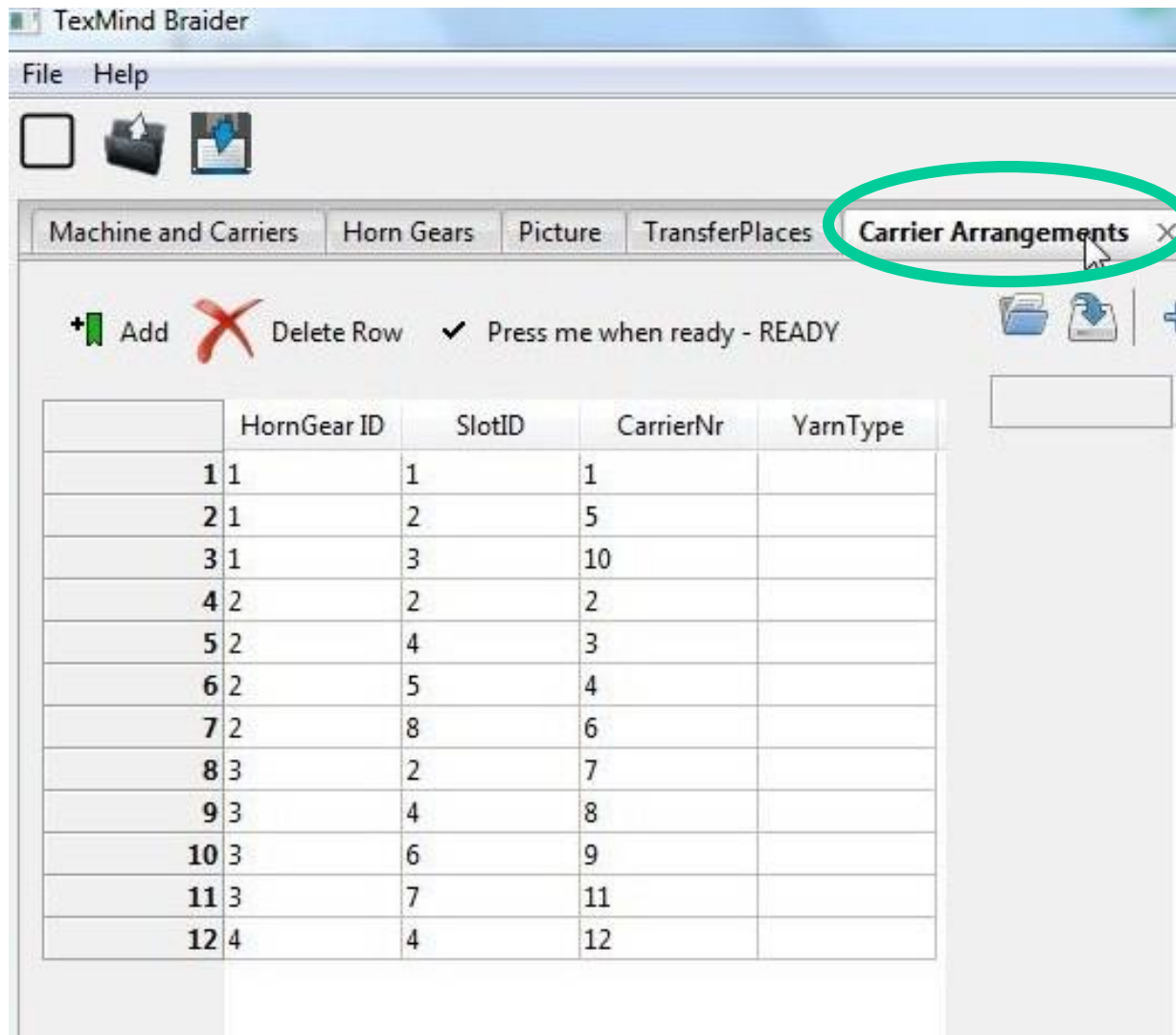
Definition einzelner Flügelräder



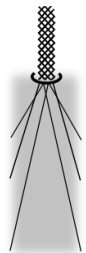
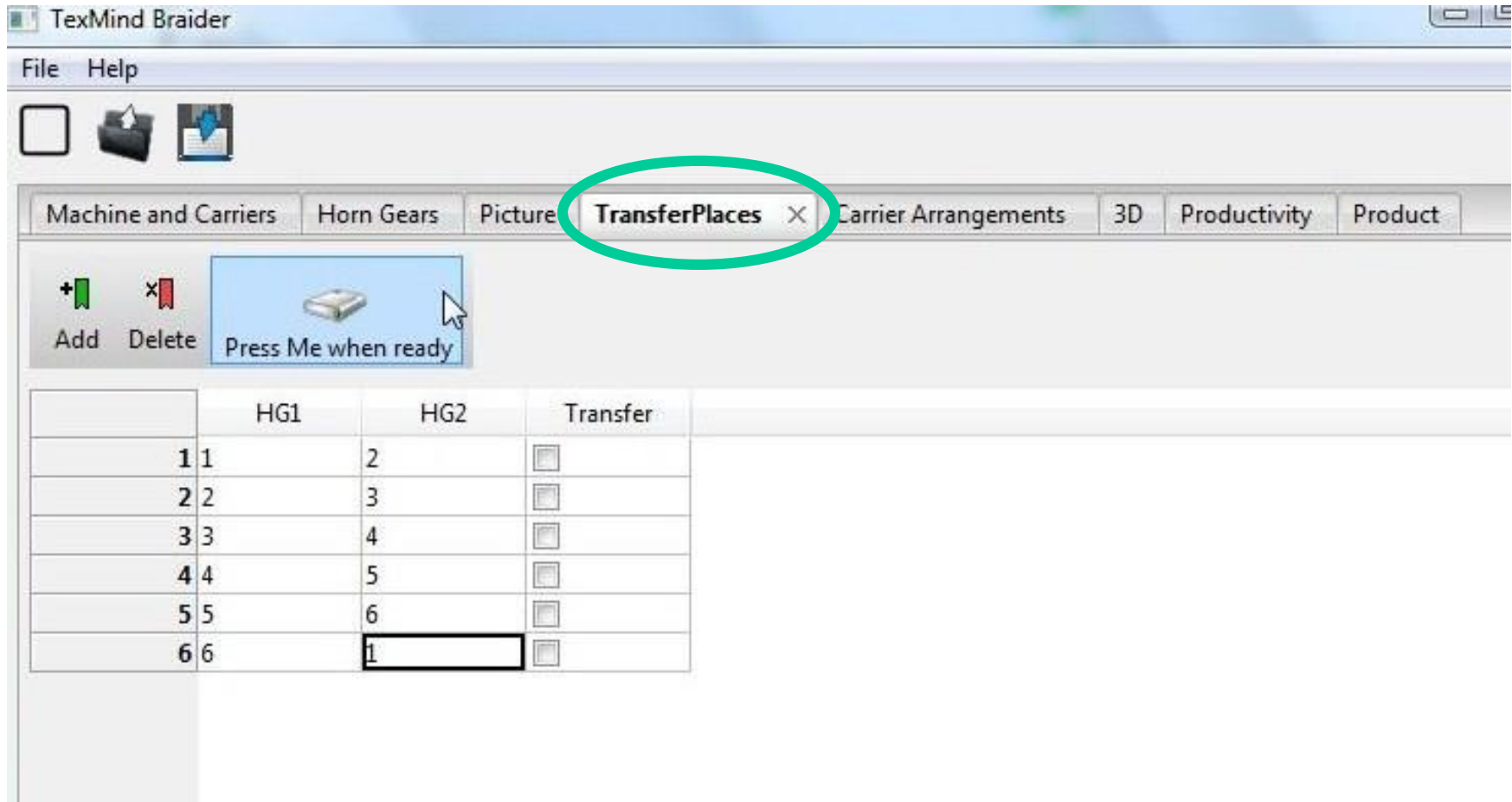
Flügelräder verschieben



Klöppelanordnung



Klöppeltransfer

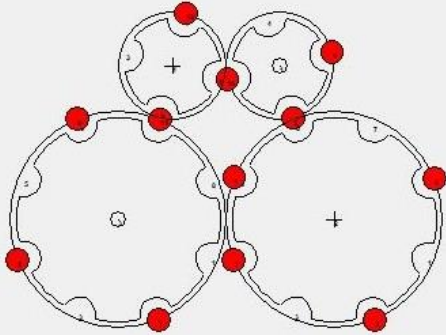


Arbeitsfenster individuell anordnen

File Help

Machine and Carriers **Picture** x TransferPlaces 3D Productivity Product

Initial Position Save EMF Zoom in Zoom out (Re-) Draw Export Picture svg Export Picture Emf Rotate 20 Steps 3D



Move Horn Gear Nr Move Now Rotate

Carrier Arrangements x

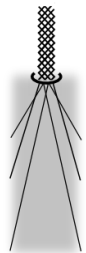
+ Add X Delete Row ✓ Press me when ready - READY

	HornGear ID	SlotID	CarrierNr	YarnType
1	1	1	1	
2	1	2	5	
3	1	3	10	
4	2	2	2	
5	2	4	3	
6	2	5	4	
7	2	8	6	
8	3	2	7	
9	3	4	8	
10	3	6	9	

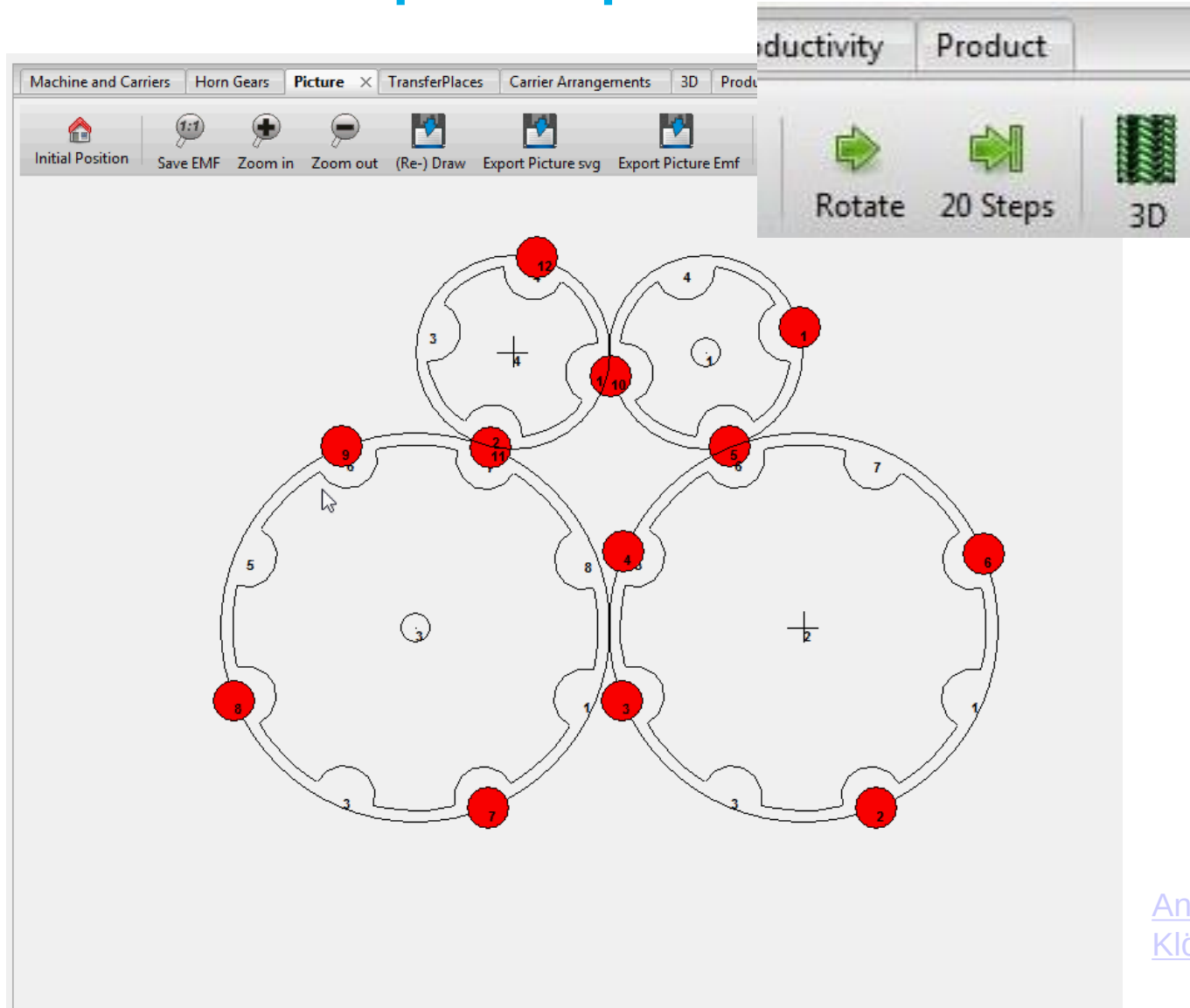
Horn Gears x

	Slots	Radius	coord xc	coord yc	direction
1	4	40.00	281.00	67.00	1.00
2	8	80.00	321.00	180.00	-1.00
3	8	80.00	162.00	180.00	1.00
4	4	40.00	202.00	67.00	-1.00

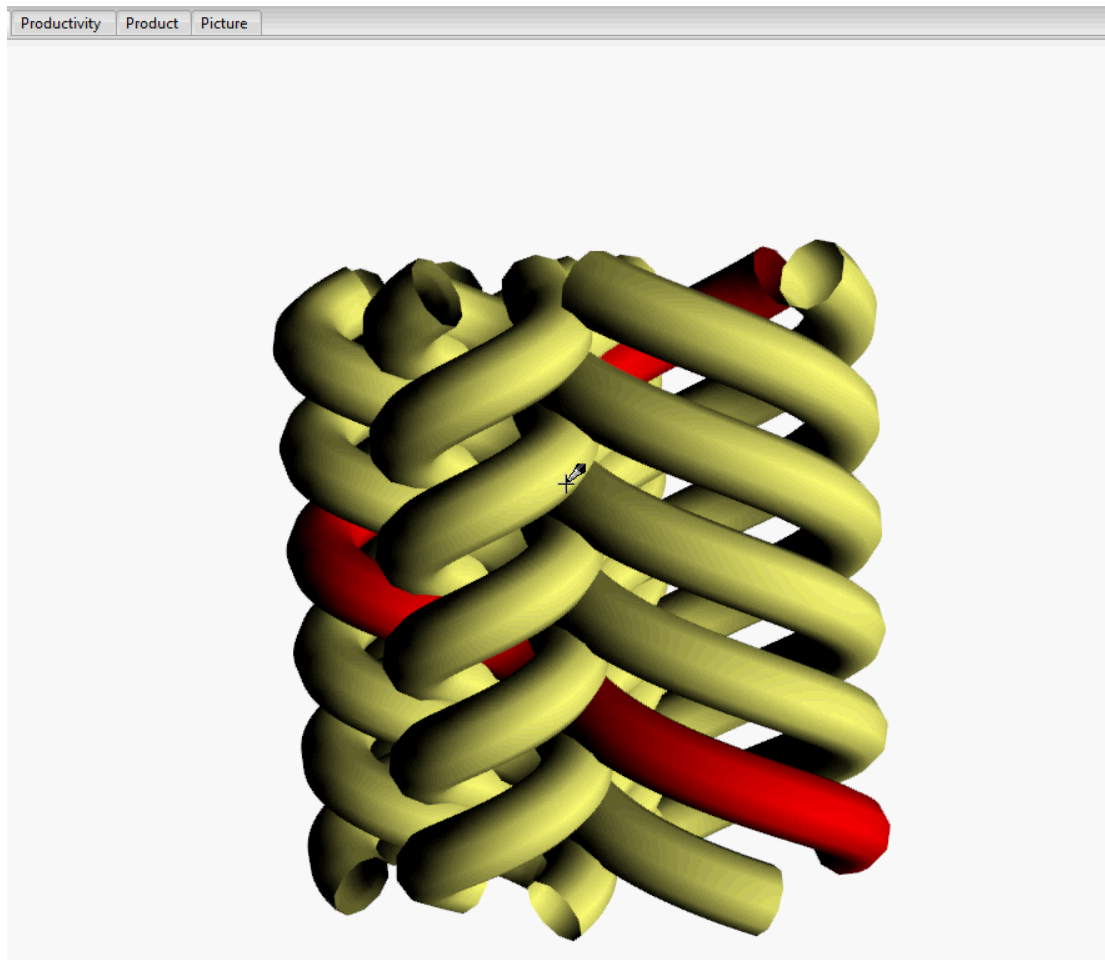
Add Delete Save Duplicate



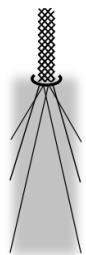
Beispiel Trapezkordel



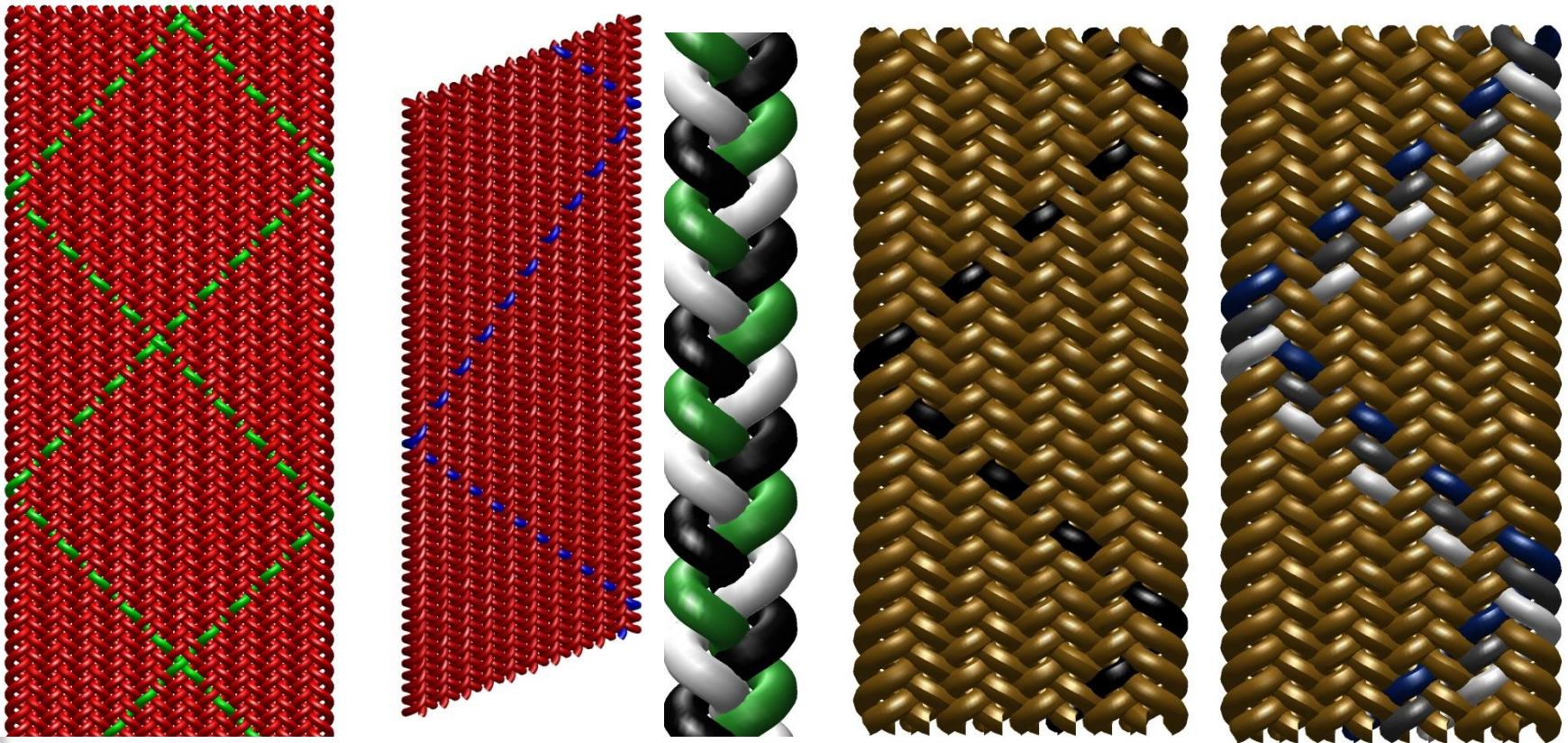
[Animation](#)
[Klößelkollision](#)



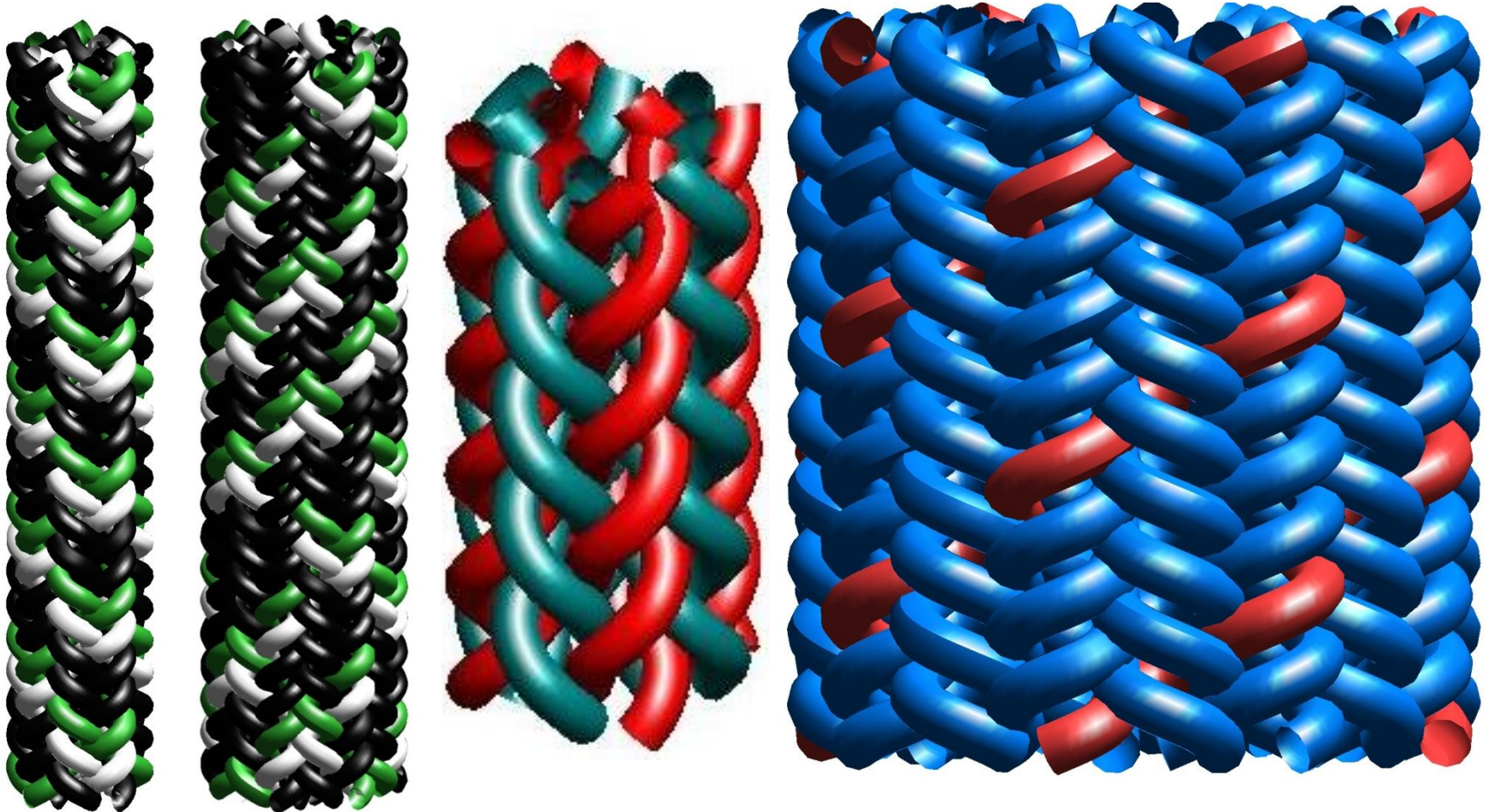
[3_trapez.avi](#)



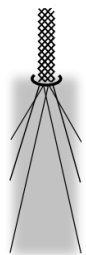
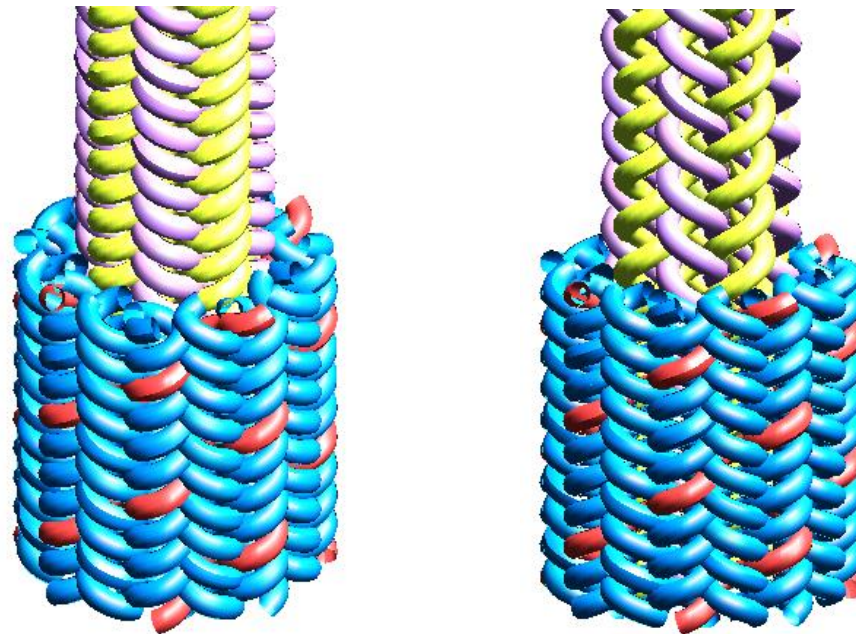
Simulierte Flachgeflechte



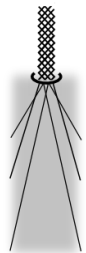
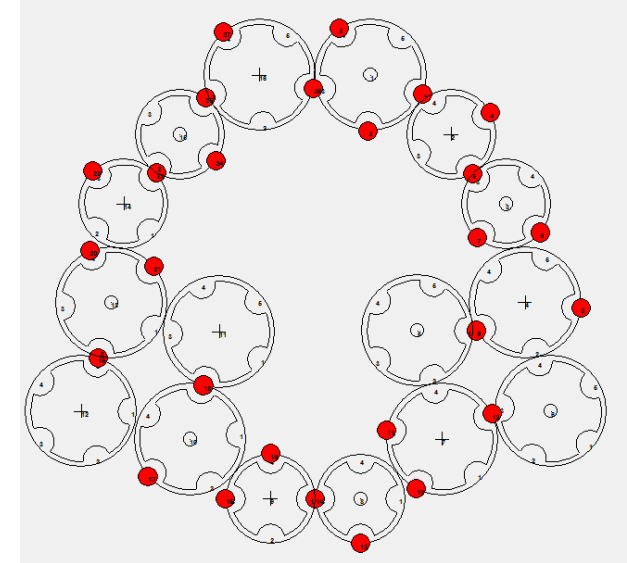
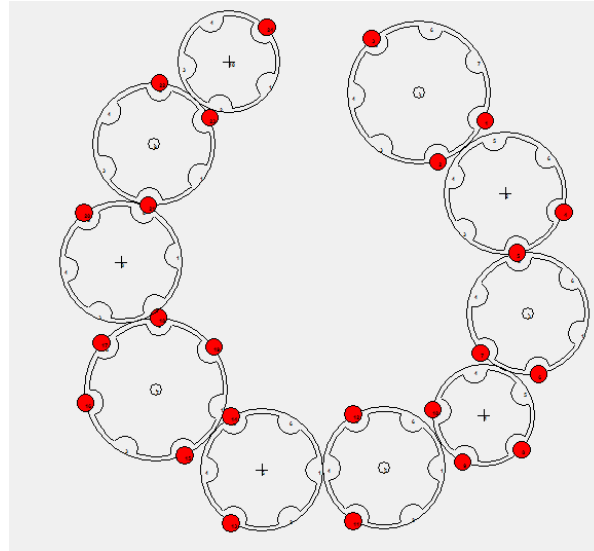
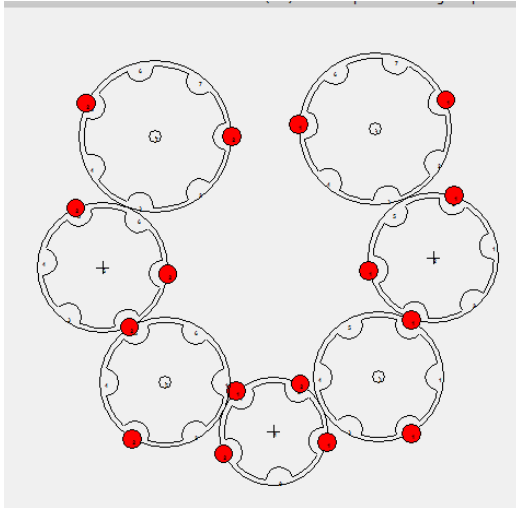
Rundgeflechte



Kern-Mantel Geflechte



Weitere Beispiele



Zusammenfassung

Maschinendefinition
Stich
Anzahl der Flügelräder / Einschnitte
Drehzahl
Abzugsgeschwindigkeit



Musterdaten:
Klöppelbesetzung
Garne



Klöppelbewegungsemulator
Basis für geometrisches Model
Prüft die Klöppelbesetzung



Klöppeldynamik
Längenkompensation
Garnabwicklung

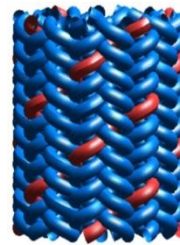
in Bearbeitung

Flechtprocess
Geflechtbildung
Relaxation

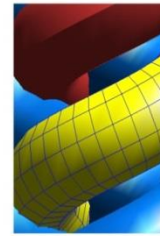
Algorithmen vorhanden, Integration in Bearbeitung

Testsimulator
Zugprüfungsimulation
Biegesimulation

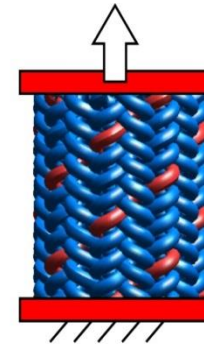
Algorithmen vorhanden, Integration in Bearbeitung



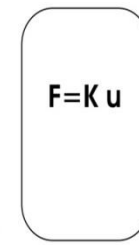
Geometrie



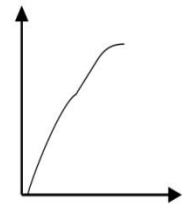
FEM Netz
Elemente
und Kontaktzonen



Belastungen
und
Befestigungen

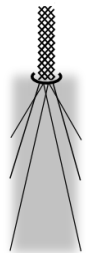


Berechnung

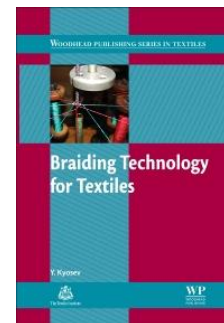
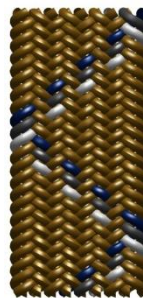
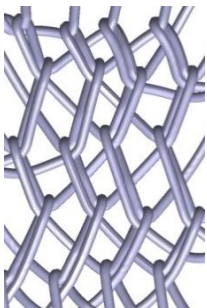


Auswertung

Es ist noch viel zu tun!
Aber wir tun es.



Herzlichen Dank für Ihre Aufmerksamkeit !



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www.hs-niederrhein.de

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www.texmind.com