

opTex-weaving tension

Software for the weaving product development

Product Information

Optex-weaving tension is an application that is used in weaving mills for production optimization. It helps to know right from the beginning of product development, which loads the warp and weft yarns in their processing subject. The software can be used - both as an independent application or integrated - along with **WeaveStruct**. In the latter case, the application is called from **WeaveStruct** and all relevant yarn data be automatically entered in the bottom bar (Tab 1).

The software is divided into two areas.

1st Warp tension

We first created a specialized shed geometry or call a previously saved up. Table 1 (Fig. 1) is located on the right side this one data table (Fig. 2). The top three listed parameters are mutually interdependent. If a value is changed, another also changes by himself. You can enter the values directly or press the little arrow buttons. Binding which are running pick by pick and have a complete shed change, then the corresponding check boxes has to be activated, also when the upper shed is on tip and the warp ends are not clamped between the the clamping rail and harness frame package. The "shed length" is calculated from the beat-up to the cross-clamping in the back. From there to the back beam, the designation is called "extra length". The recoil of the fell at beat-up can be simplified as follows. You turn the machine by hand to the point of where the reed edge touches the fabric. And reflects the degree of value in the software and can then determine the recoil of the fell at beat-up by the program.

There is a help if the shed data's enters with the help of the graphic on Tab 2 (Fig. 3). The data will be automatically transferred to Table.

By pressing the switch <calculate shed geometry> be determined for each harness frame the elongation values for the upper and lower shed with and without the beat-up and stored in a table (Fig. 4). It means:

S = harness frame no.

Wv = front shed angle °

Lv = front shed length mm

FTV = compartment front shed to back shed

Hub = total stroke mm

LÄ OF = warp thread length by conscription in the upper shed (with / without beat up)

LÄ UF = warp thread length by conscription in the lower shed (with / without beat up)
closed shed = warp thread length in closed shed position

Shown is the minimum and maximum length change at harness frame lift.

So it can also calculate the warp yarn tension. Stated will be the (static) percentage of elongation and breaking force and the number of load cycles. This gives an index number of the dynamic load to continue the rubbing cycle of the warp thread from in

the heddle the reed dents in the front shed and the prematurely closed shed between warp and weft (Fig. 4).

If you turn to Tab 3, one can look at the shed geometry graphically. It means:

DAo = elongation at lift up top shed

DAu = elongation at lift up bottom shed

Basically, we distinguish between

Parallel shed (Fig. 5) with relative unclean front shed,

Inclined shed (Fig. 6) with larger elongate difference but clean front shed,

Elliptical shed (Fig. 7), no differences between warp length but no clean front shed,

Mixed shed or optimized shed (Fig. 8): front shed warp end length are balanced.

By clicking on the button on tab 1 and <calculate shed geometry> can the graphic be displayed.

2nd Weft tension load

If, on the right side of Tab 1 (Fig. 9) all weft data have been inserted or a previously saved file is called, can be done the calculation. Also the weft insertion rate and performance is determined.

The graph in the lower left part of Figure 9 shows the relationship between weft insertion start and end to the shed dwell time. Also the warp tension is taken in to account and displayed, if the start of shed opening will be forwarded (Fig. 2).

On Tab 2 (Fig. 10 and 11) the weft tension load for each weft insertion type is determined. For this purpose, an individual line for the pre tension (breaking) can be created, providing for the loading and discharge for certain phases. Figure 10 applies to a double rapier weaving machine, Figure 11 in an air-shot insertion. For the latter, measured values can be entered, which is determined at the weft accumulator (Fig. 12).

System requirements:

opTex-Weaving tension was a 32-bit programming for the (IBM compatible) PC created and runs under Windows XP, Vista and 7. The application is installed as a single user.

The program is designed for a screen resolution of 1280 x 1024 or above. An adaptation from a high resolution is recommended. The color depth to 32 bit (true color) set.

What is needed is to install a CD-ROM drive as well as a mouse pointing device.

Subject to change

opTex-Webbelastung - E03 - G_0001.FG

Datei speichern Optionen Hilfe Info

Fachgeometrie Berechnung

c:_VISUAL STUDIO\optex-WebBELASTUNG\Dat-FG

E03 - G_0001.FG

Laden Speichern Garn-ID hinzufügen Löschen

Fachgeometrie berechnen Fachgeometrie darstellen

S	Wv	Lv mm	FTV	H mm	LA OF %	LA UF %	LA OF %	LA UF %	geschl. F.
Nr.	*				ohne Ladenanschlag	mit Ladenanschlag			
01	21,2	195,0	0,20	073,0	+0,91	+0,95	+1,27	+1,30	
02	20,4	207,0	0,21	074,6	+0,91	+0,95	+1,27	+1,31	
03	19,7	219,0	0,22	076,2	+0,91	+0,95	+1,26	+1,31	
04	19,1	231,0	0,23	077,6	+0,91	+0,95	+1,26	+1,31	
05	18,5	243,0	0,24	078,9	+0,91	+0,95	+1,26	+1,31	
06	17,9	255,0	0,26	080,2	+0,91	+0,95	+1,26	+1,31	
07	17,3	267,0	0,27	081,4	+0,90	+0,95	+1,26	+1,31	
08	16,8	279,0	0,28	082,5	+0,90	+0,95	+1,26	+1,31	

Längenänd. durch Fachbildung min-max % +0,90 +1,32

Kettgarn-Belastung berechnen

% zur Bruchdehnung | cN/tex % zur Festkeit | 17 Reibzyklen Kettfaden/Litze
Ges-Zyklen | Bel-Koeffizient (mit Grundzugkraft) 377 Reibzyklen Kettfaden/Riet
20,62 6,1 cN/tex=26,9% 3007 62 k.A. Reibzyklen Kett-/Schussfaden

Fachgeometrie Daten

Fachart einstellen

Parallelfach
Schrägfach
Elliptisches Fach
Mischfach

Alle Daten löschen

Fachdaten

Vorderfachwinkel für Schaft 1 Wv-1° 21,2

(gesamter) Hub bei Schaft 1 H-1 mm 73,0

Vorderfachlänge bei Schaft 1 Lv-1 mm 195,0

Fachlänge LF mm 1000

Zusatzlänge Streichbaum - Abklemmung LFz mm 400

Gesamtlänge Arbeitsebene mm 1400

Fachteilverhältnis bei Schaft 1 FTV-1 0,20

Anzahl der Schäfte S 16

Schaftteilung ts mm 12

Litzenauge + Litzenspiel mm

Anhebung hinteren Spreizpunkt AN mm 6,0

Absenkung der Schäfte AB mm 0,0

Schwingbaum mm

Masch-Grad 340-360° 360 Vortuch mm 5

Grundzugkraft cN/Fd cN/tex 2,0

Ständiger Fachwechsel (L1/1 - RL 1/1 - P)

Oberfachspitze am Streichbaum

Fachschluss= 300-360° 360 3-sch-Frotier EAV 1:

Eingelassene Daten von WeaveStruct F_0006 - G_0001

tex	Höchstzugkraft cN	CV%	Bruchdehnung %	2% E-Modul CV%	Feinheitsfestigkeit cN/%/tex²	Feinheitsfestigkeit cN/tex	Schuss Fd/cm	Rietbesetzung	Drel-K
50,0	1135	12	7,1	9,8	6,4	22,7	21,48		

Garn Daten löschen Zur Schussbelastung

Abb. 1: Warp tension

Fachdaten

Vorderfachwinkel für Schaft 1 Wv-1° 21,2

(gesamter) Hub bei Schaft 1 H-1 mm 73,0

Vorderfachlänge bei Schaft 1 Lv-1 mm 195,0

Fachlänge LF mm 1000

Zusatzlänge Streichbaum - Abklemmung LFz mm 400

Gesamtlänge Arbeitsebene mm 1400

Fachteilverhältnis bei Schaft 1 FTV-1 0,20

Anzahl der Schäfte S 16

Schaftteilung ts mm 12

Litzenauge + Litzenspiel mm 2

Anhebung hinteren Spreizpunkt AN mm 6,0

Absenkung der Schäfte AB mm 0,0

Schwingbaum mm 5

Masch-Grad 340-360° 350 Vortuch mm 1,481

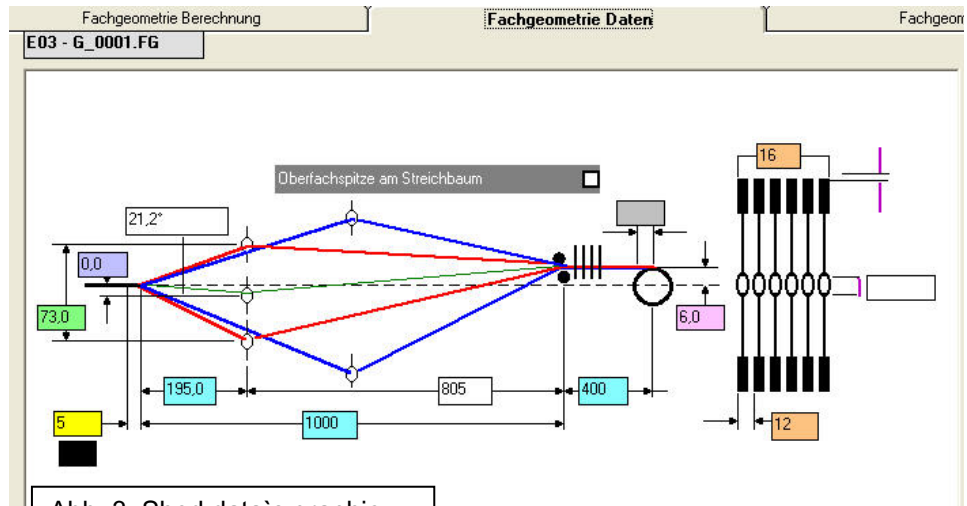
Grundzugkraft cN/Fd 80 cN/tex 1,6

Ständiger Fachwechsel (L1/1 - RL 1/1 - P) ☒

Oberfachspitze am Streichbaum ☒

Fachschluss= 300-360° 345 3-sch-Frotier EAV 1:

Abb. 2: Shed data's



S	W/v	Lv mm	FTV	H mm	LÄ OF %	LÄ UF %	LÄ OF %	LÄ UF %	geschl. F.
Nr.	*				ohne Ladenanschlag	mit Ladenanschlag			
01	20.6	195.0	0.20	071.0	+0.40	+0.45	+0.47	+0.52	+0.57
02	20.3	207.0	0.21	074.1	+0.41	+0.46	+0.48	+0.53	+0.57
03	20.0	219.0	0.22	077.1	+0.42	+0.47	+0.49	+0.55	+0.57
04	19.7	231.0	0.23	080.0	+0.42	+0.49	+0.50	+0.56	+0.57
05	19.4	243.0	0.24	083.0	+0.43	+0.50	+0.50	+0.57	+0.57
06	19.1	255.0	0.26	085.8	+0.44	+0.51	+0.51	+0.59	+0.57
07	18.9	267.0	0.27	088.7	+0.45	+0.53	+0.52	+0.60	+0.57
08	18.6	279.0	0.28	091.5	+0.46	+0.54	+0.53	+0.61	+0.57

Längenänd. durch Fachbildung min-max % +0.40 +0.74

Kettgarn-Belastung berechnen

% zur Bruchdehnung | cN/tex % zur Festkeit | (zugkraft)

11.6% 3.9 cN/tex=17.2% 3007 35 6

845 Reibzyklen Kettfaden/Litze

377 Reibzyklen Kettfaden/Riet

Reibzyklen Kett-/Schussfaden

Abb. 5: Parallel shed

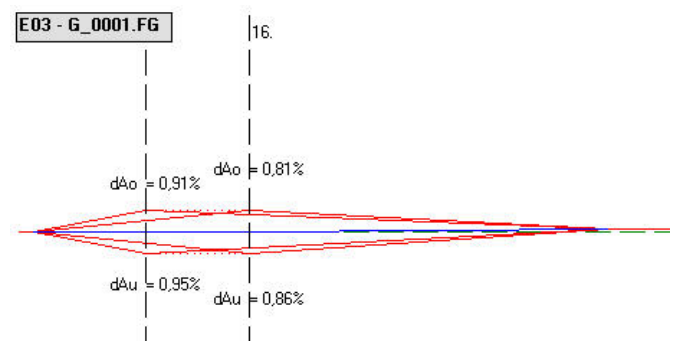


Abb. 6: Inclined shed

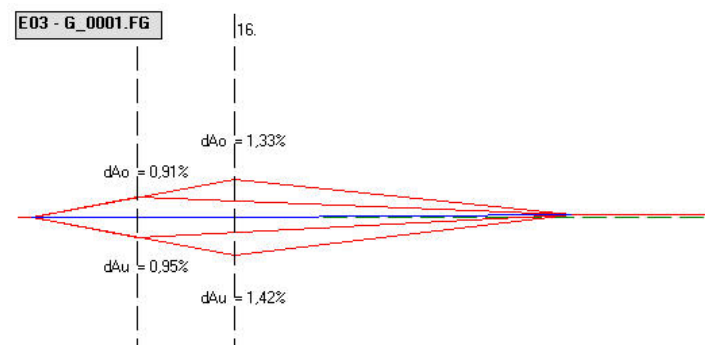


Abb. 7: Elliptical shed

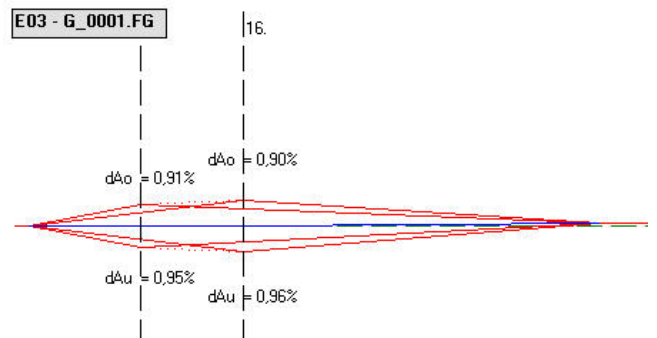


Abb. 8: Mixed shed / optimised shed

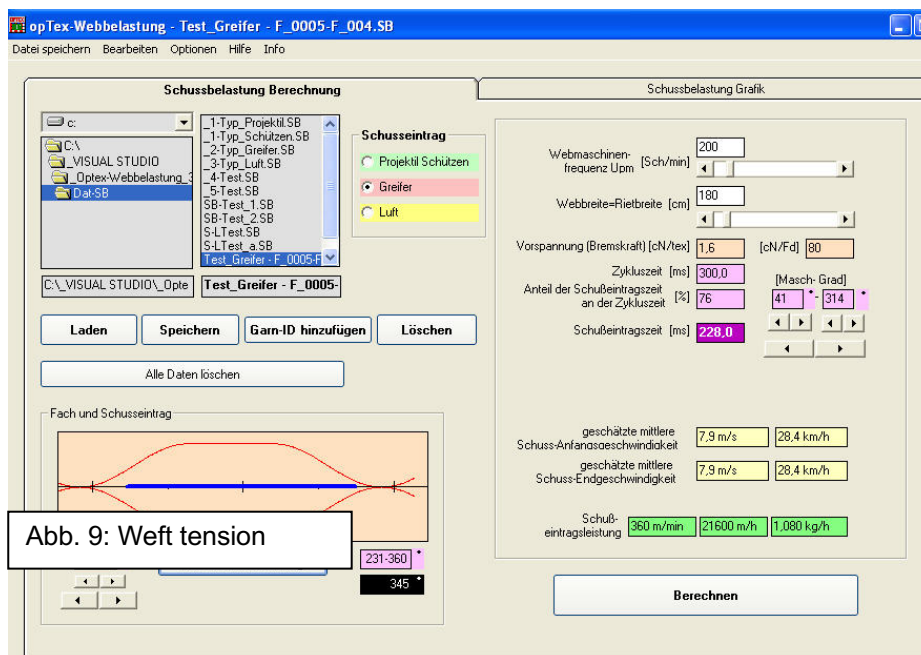
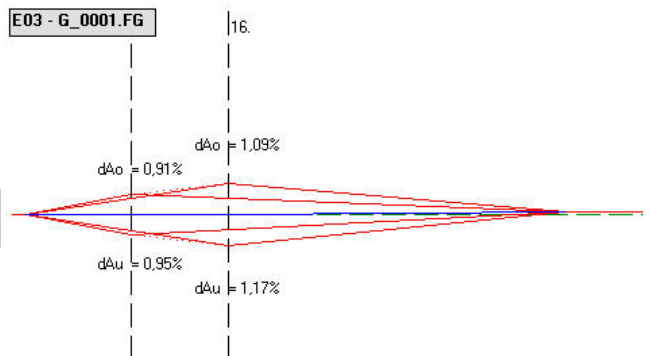


Abb. 9: Weft tension

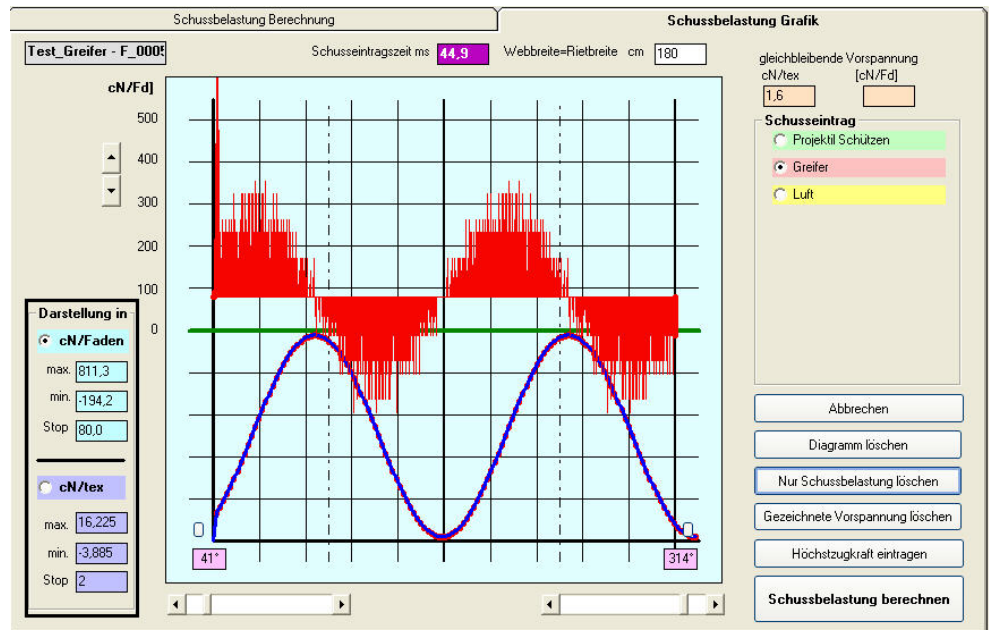


Abb. 10: Doublr rapier weft insertion

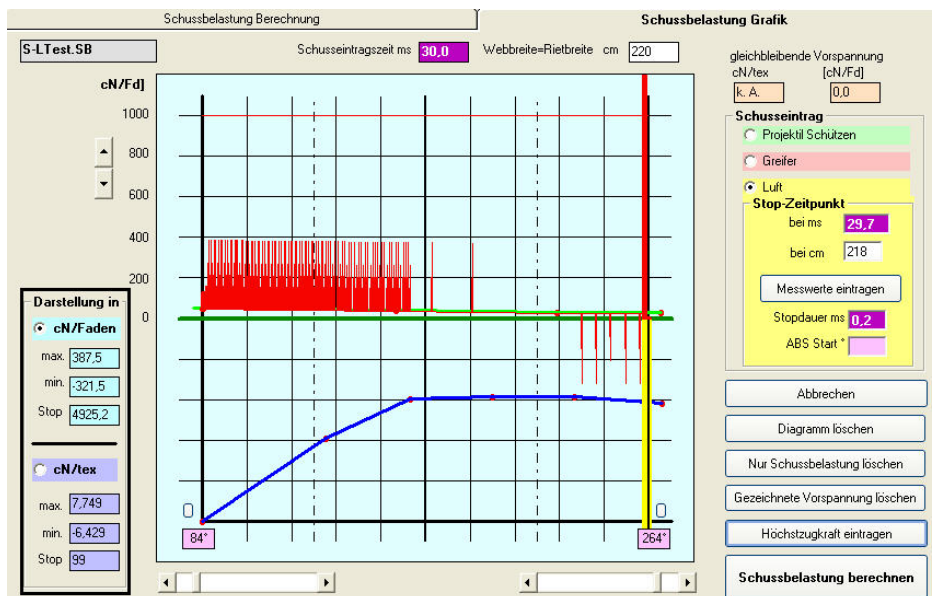


Abb. 11: Air weft insertion

Messwerte

Windung	ms
1	9,25
2	6,25
3	6,11
4	6,16
5	6,48
6	
7	
8	
9	
10	

Vorspul-Durchmesser mm 120,0
Vorspul-Umfang mm 377,0

Messwerte Löschen
Fertig

Stop-Zeitpunkt

bei ms
bei cm

Messwerte eintragen
Stopdauer ms 0,2
ABS Start *

Abbrechen

Abb. 12: Value for Air-weft insertion

Development - Copyright

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