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

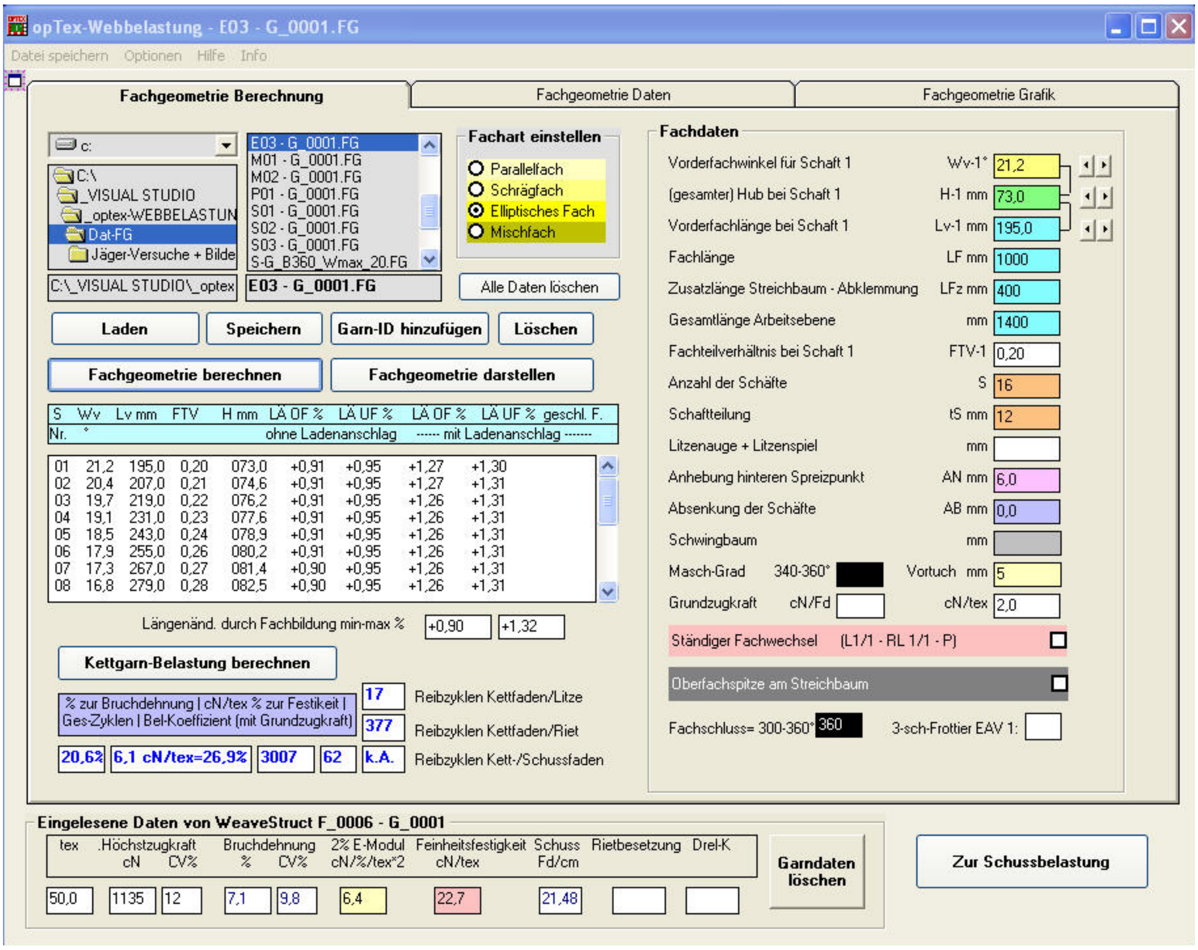


Abb. 1: Warp tension

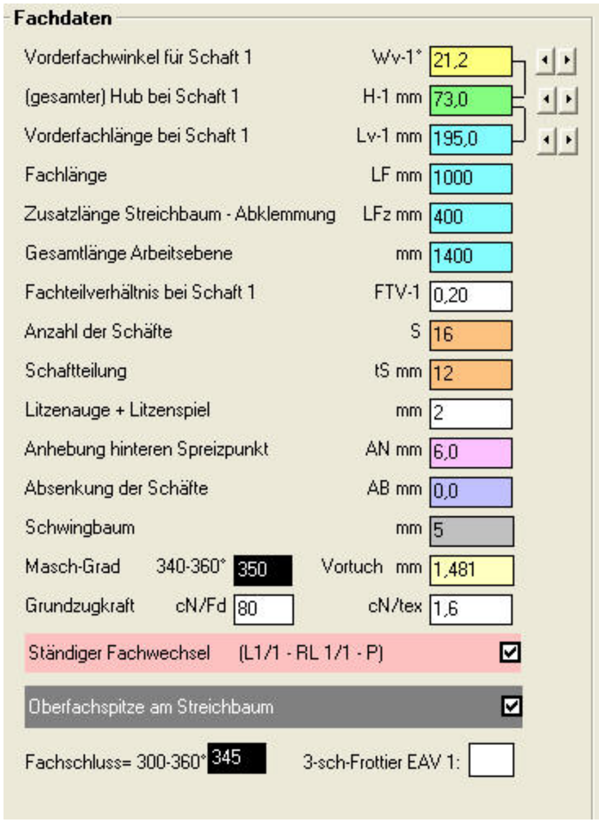


Abb. 2: Shed data's

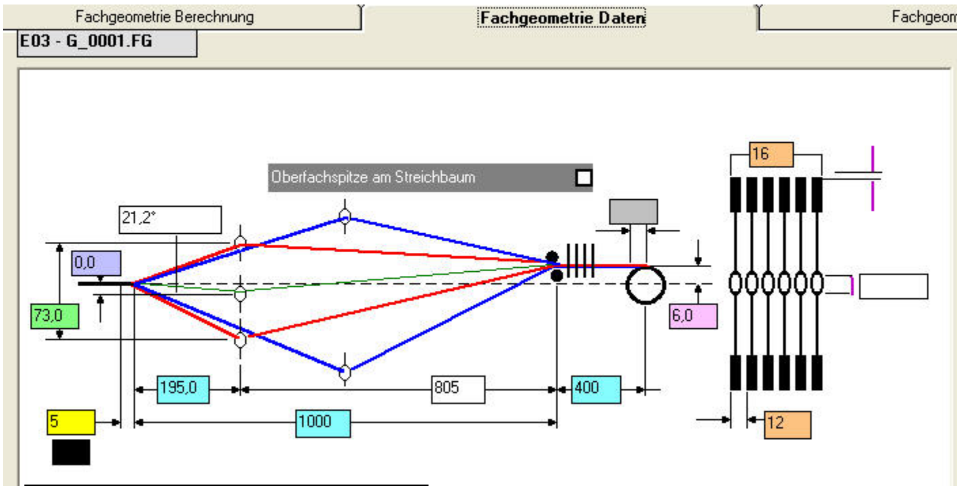
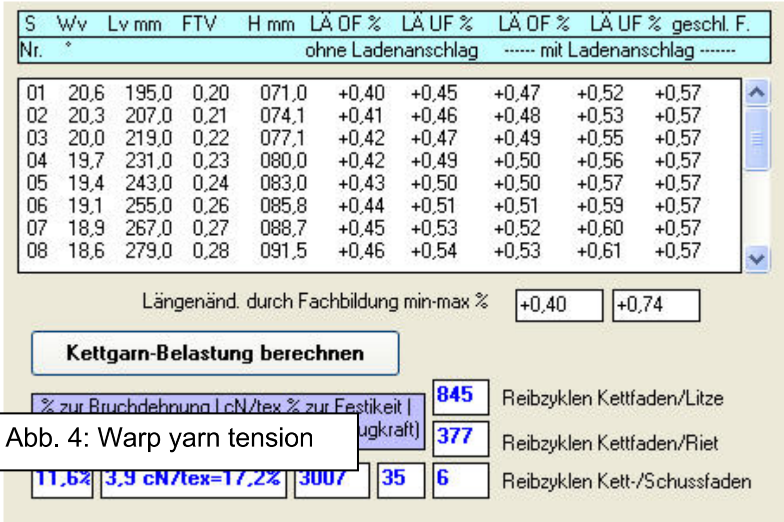


Abb. 3: Shed data`s graphic



S Nr.	Wv °	Lv mm	FTV	H mm	LÄ OF % (ohne Ladenanschlag)	LÄ UF % (ohne Ladenanschlag)	LÄ OF % (mit Ladenanschlag)	LÄ UF % (mit Ladenanschlag)	geschl. F. (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 Festikeit | ...ugkraft)

11,6% | 3,9 cN/tex=17,2% | 3007 | 35

845 Reibzyklen Kettfaden/Litze

377 Reibzyklen Kettfaden/Riet

6 Reibzyklen Kett-/Schussfaden

Abb. 4: Warp yarn tension

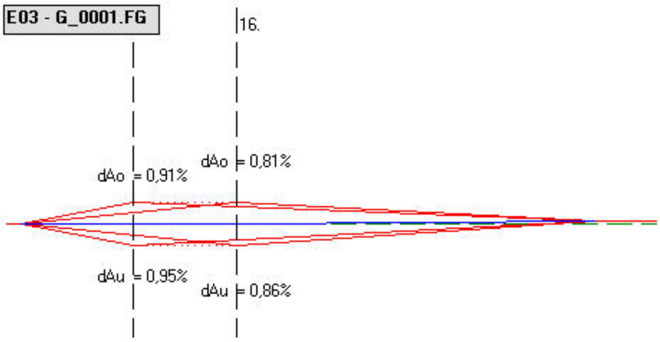


Abb. 5: Parallel shed

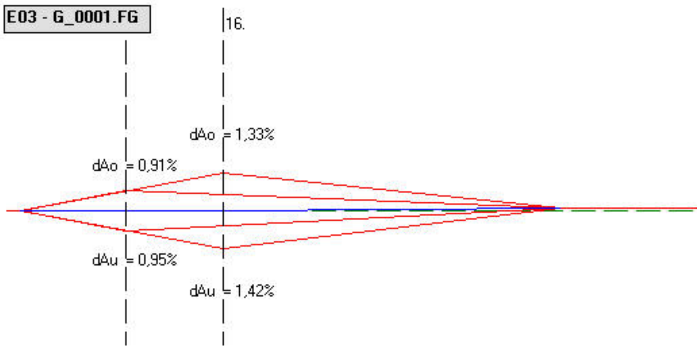


Abb. 6: Inclined shed

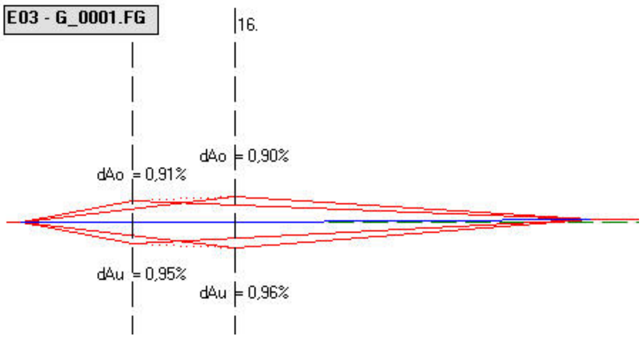


Abb. 7: Elliptical shed

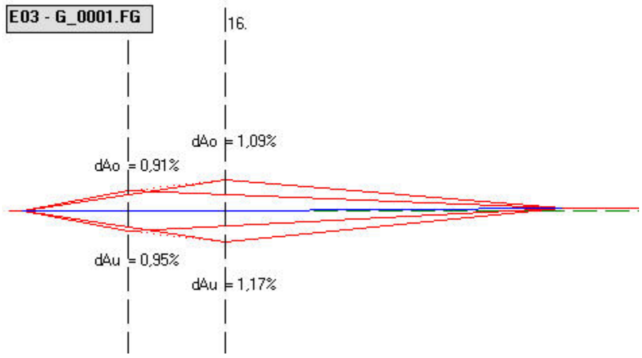


Abb. 8: Mixed shed / optimised shed

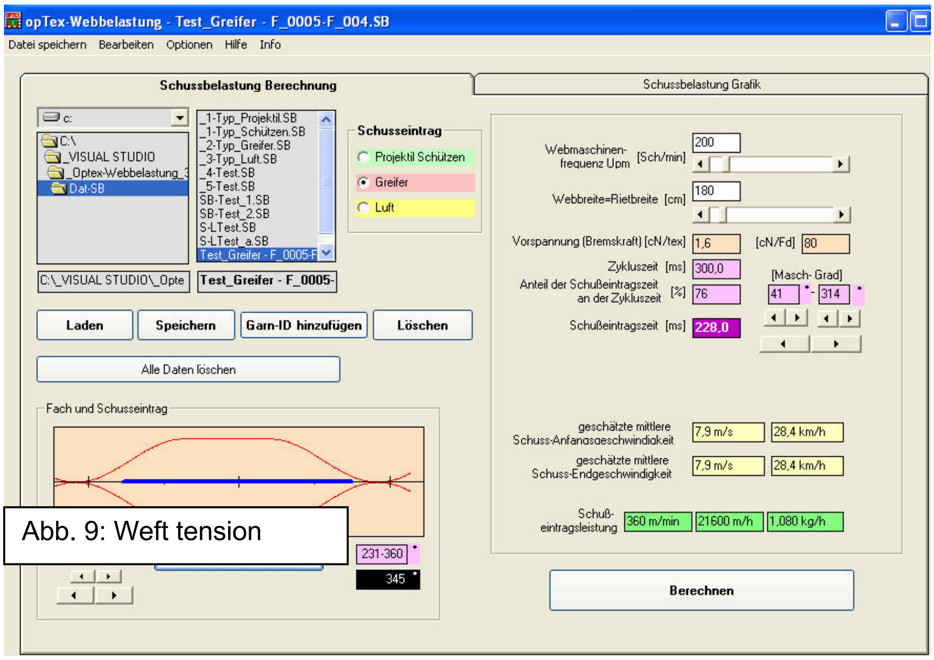


Abb. 9: Weft tension

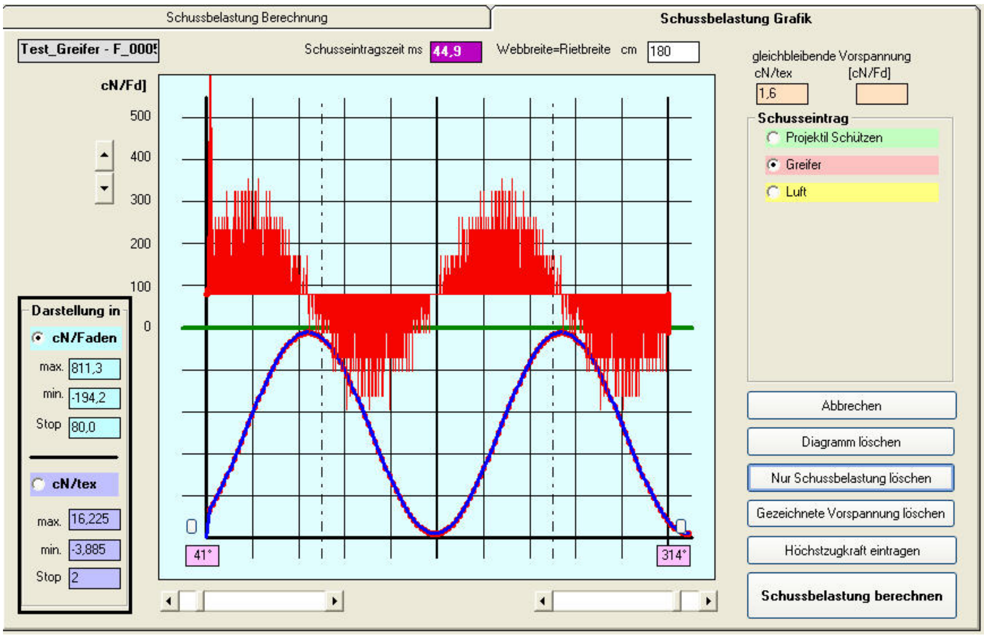


Abb. 10: Doublr rapier weft insertion

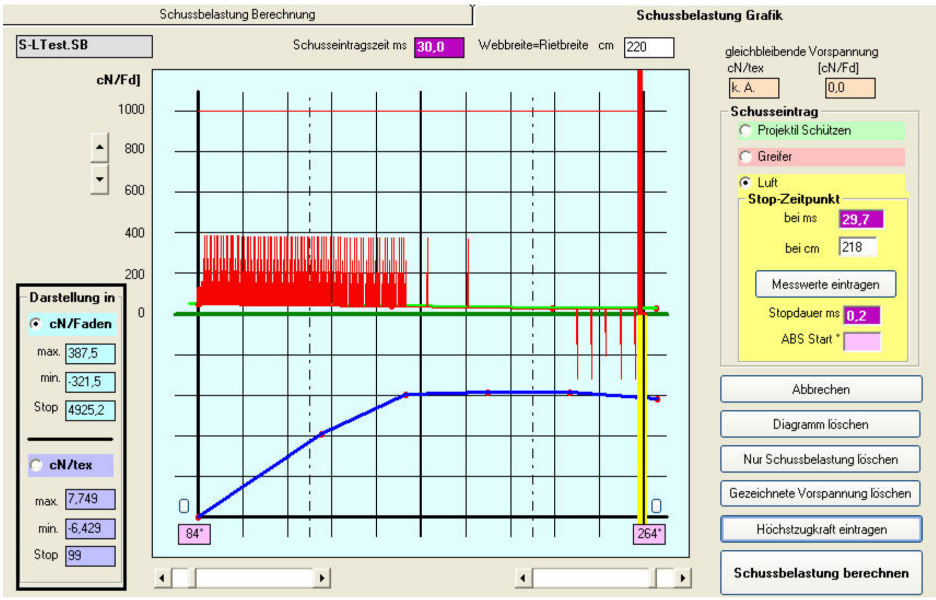


Abb. 11: Air weft insertion

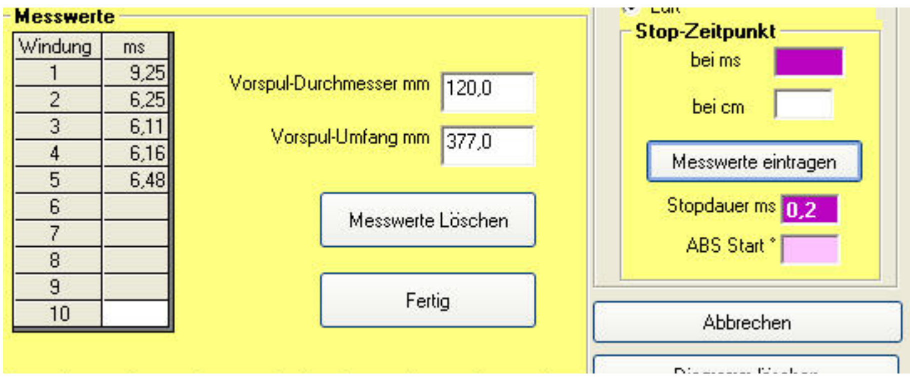


Abb. 12: Value for Air-weft insertion

Development - Copyright

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