Dipl.-Ing. Albert Classen

New and second hand textile machines & spareparts

Vermittlung und Verkauf von

Textilmaschinen und textilen Erzeugnissen

Ersatzteil- und Zubehörservice

LongCRUSHER 02- 04 - DS

adjustable , high performance crusher with highest efficiency solid and strong for best results and best reproducibility

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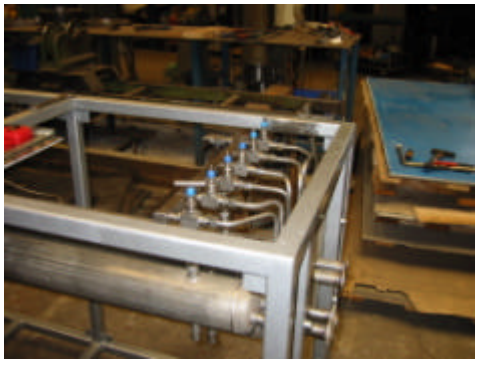
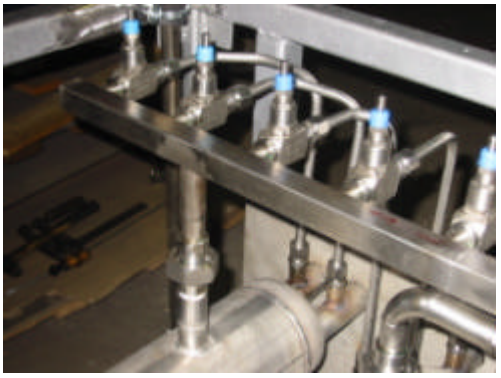
Albert Classen **Ostdamm 151** **48249 Dülmen**

Description

Inlet frame for the machine and also unrolling device is optional .

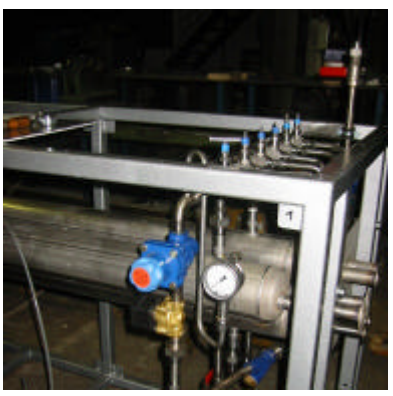
The fabric has to pass the steam heated tube , standard is one tube with the following internal tubes – ¾ “ , 1 “ , 1 1/2 “ and 2 “ – so that depending on the volume of the fabric in rope form the finisher can use one of the above mentioned tubes .

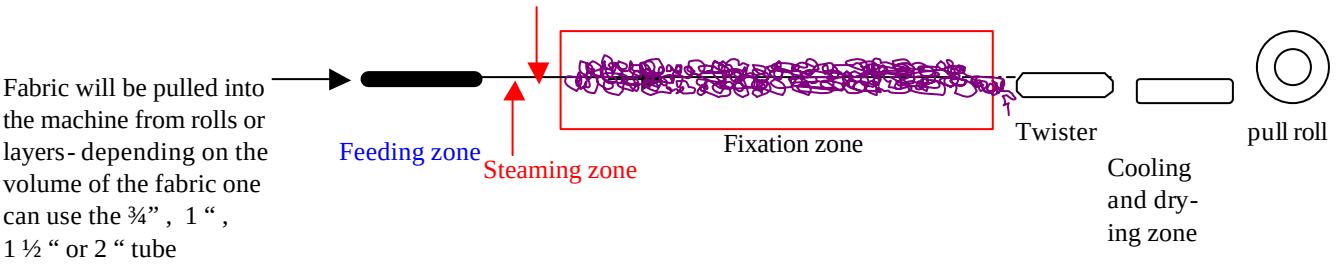




Direct steam is pressed into the internal tube right at the beginning , so that the energy and moister helps to form the desired creases . By separate valves the quantity of direct steam can be adjusted for each single internal tube .

During the passage through the internal tube from outside this tube the indirect steam heats up the fabric and the fixation of the fabric starts . The system can be heated with steam up to 8 bar.
The production speed can regulated by frequency converter from 1-10 m / min .





Indirect heating

The fabric is pulled into the internal tube . This tube is surrounded by a bigger tube . This bigger tube is heated by steam up to 8 bar and heats up the internal tube. Like this the fabric is plastically deformed by steam injection and heating. Both the temperature and the amount of steam are adjustable, depending on the material and the desired result.

Temperature control by a steam pressure-reducer installed on the machine .
The steampressure is inherent to its temperature , 1 bar = 120°C , 2 bar = 133°C ,3 bar = 143°C
4 bar = 151°C , 5 bar = 158°C , 6 bar = 165°C , 7 bar = 171°C , 8 bar = 178 °C

Most of the fabrics can run at 165°C to receive a good **fixation** . Test will be run with new qualities to find the right parameters . Some colours are sensitive to high temperature. Check dyeing receipes in order to use dyes solid to contact heat . If you produce different colours start with the light colours .

The electrical panel is mounted on the machine , Pull roll and Twister are controlled by frequency converters and can be adjusted by potentiometers and minicomputers .

Operating system

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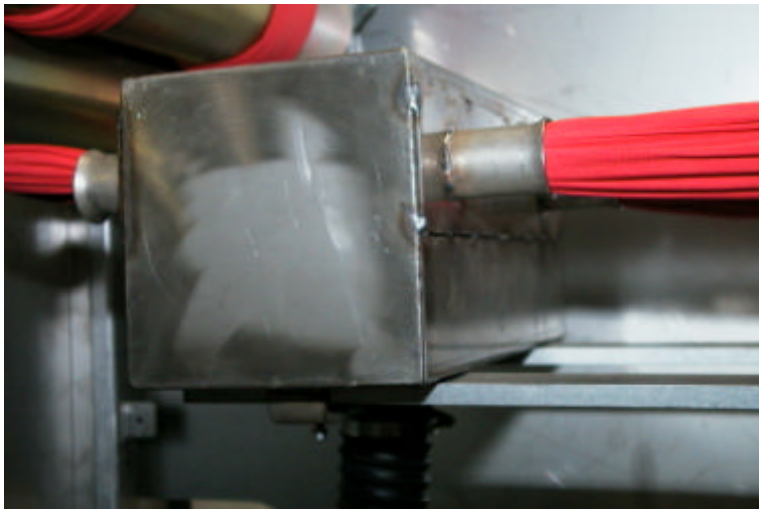
The operating system is housed in a cabinet mounted on the machine with the following functions and controls:

Main switch A, emergency stop B, frequency control reading for the material infeed C and twister speed D, temperature display E, on/off switches F and a reset button G

After passing the tube to be deformed and fixed , the fabric passes a twisting system where the fabric is turned . This system produces additional effects on the fabric. The twister is frequency controlled and can turn up to 100 times per minute . The twister turns the fabric which is in the fixation tube.

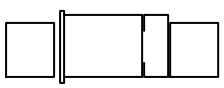
After passing the twister , the fabric will be almost open again , passes the cooling device and will be pulled by the frequency controlled pull roll .



The cooling device has adjustable in- and out – lets , so that the air will be pulled through the fabric to take away the moister and the heat.

Options :

1. **Machine is 4500 mm long , including inlet and outlet frame . If the production speed has to be increased , we can mount a second steaming and fixation zone of about 2 300mm in front of the basic machine . Like this, fixation zone will be doubled .**
2. **There is a second option to mount two big tubes parallel , 4 internal tubes of the different sizes inside. If we mount two twisters , two ropes of same quality can be finished at same time. So instead of mounting a second steaming and fixation system to double the production we can reduce the production speed to have a longer time for the fixation but at the same time we keep the production because we finish two rope simultanly .**



The ´Long - crusher consists of:

1. **Tube with 4 internal tubes , direct and indirect steam .**

2. **Twister**

3. **Cooling device**

4. **Pull roll system**

5. **high outlet frame**

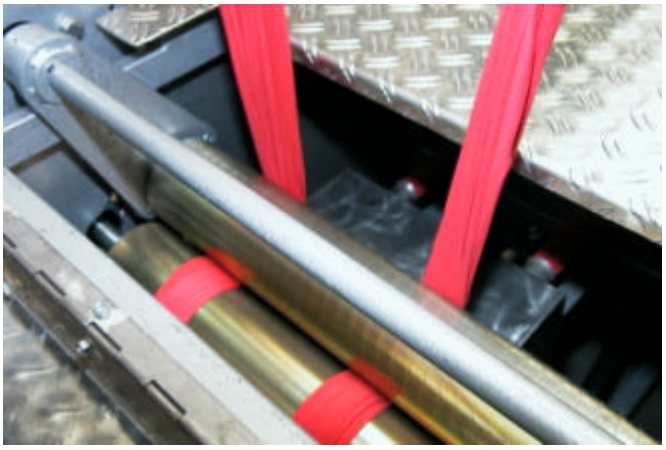
Technical Specifications

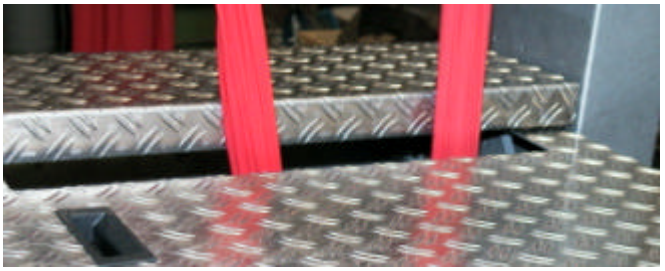
Dimensions: **L x W x H 4500 x 1000 x 2250 mm ,**
Weight: **approx. 900 kg**
Connections: **Pneumatic - 6 Bars, connection G ½“**
Steam pipe - 8 Bars, connection G ½“, +/- 50 -100Kg/hour
Electricity - 5 kW; 220/380, 3 phases, 50 Hz
Condensate – approx. 50 –100 l / 8h

Speed : **up to 600 m/hour, depending on material thickness and tube diameter**
Materials: **should contain up 65% synthetic fibres**
Exhaust: **Depending on material type and coating**

Material data of components under pressure: **Material in accordance with DIN;**
tube: Stainless steel 304

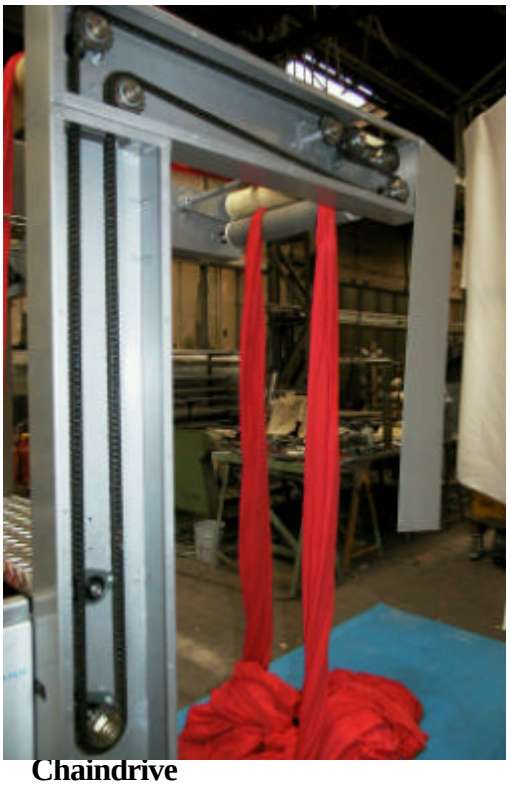
Heating tank: (PxL)< 200 Bar/l; PED Guideline table 2, internal manufacturing check, maximum pressure 8 Bars.



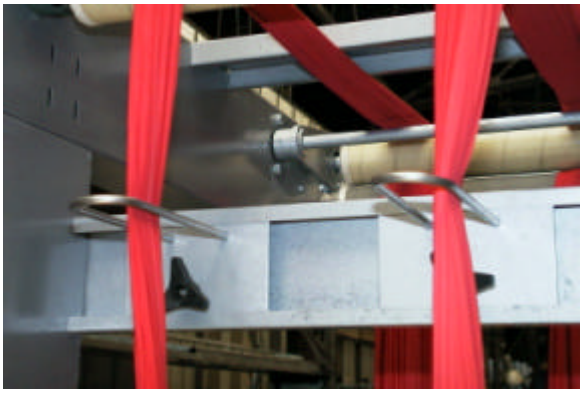


The machine is covered by a hood . If the hood will be opened , the machine will stop automatically Twisters are stopped , pull roll stops and also steam is closed .

After passing the cooler , the fabric will be pulled by a pair of rollers , a chain combines the chain wheels



Chaindrive



Seperation of the fabric , if two ropes are crushed

Final pullrolls

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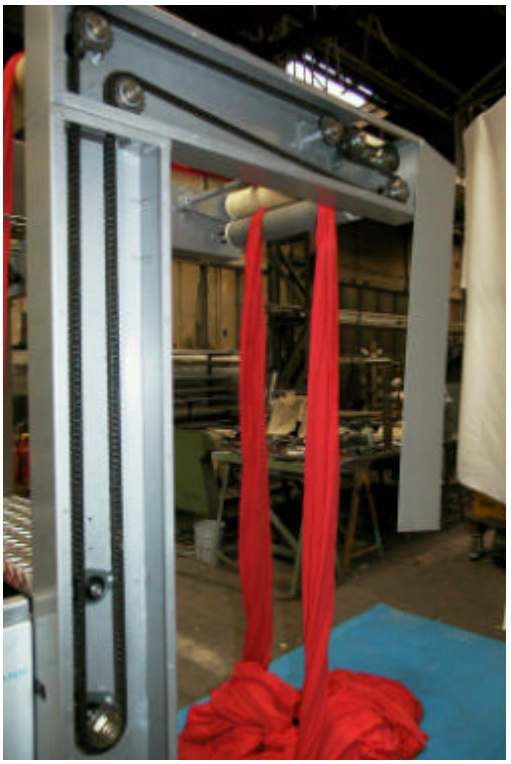
Finger protection of the pullrolls

After passing the cooler , the fabric will be pulled by a pair of rollers , a chain combines the chainwheels



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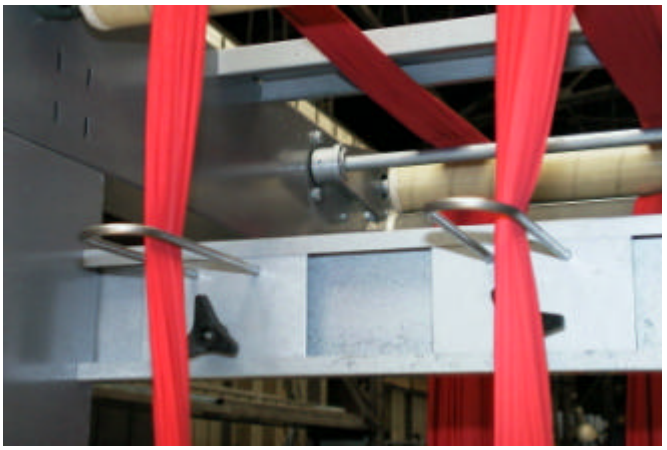

Seperation of the fabric , if two ropes are crushed

Final pullrolls

Crushing Process

Crushing process to be performed one to two times according to the material and the density to be obtained . With our machine the fabric receives a very regular and intensive Crush effect. The fabric is almost dry and cold, leaving the tube. This is a big advantage for the final finishing of the fabric.
The flat woven articles are normally sent to a transfercalander, to fix the crush. On the transfercalander the finishing will be fixed in the way the customer desires. Therefore the inlet frame of the transfercalander must have two additional options :

1.One opening device by driven rollers together with a width control so that the fabric will be stretched to the final width.
2.One overfed system that allows to feed more fabric.

With these two options the fabric can be finished with more or less visible crush effects. If the customer needs less effect the fabric will be stretched more in weft direction with device No1 and is held back in warp direction with device No 2.

The long crush process is intensified by the diameters of the tube . If the fabric has to pass a smaller diameter of the tube , the effect is more intensive .

If the fabric is twisted during the passage through the tube , a second crush effect is visible . The more turns you give to the fabric , the more effect you see.

One modification is to work without the twisting system , or by working with the twisters switched off.

The better fixation you get with slower production speed.

That is why we mounted always two tubes of the same size , so even with lowest speed , the production is doubled .

The final fixation should be processed on the transfercalander or on a stenter.

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