



## SCREENPRINTING MACHINES LEADING THE WAY

### **With Flock ... your Products become more attractive**

by HEBBECKER GMBH Germany (Klaus Wagner)

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#### **Flocking on Textile and other flat materials**

##### **The flocking process is to be done as follows:**

A film has to be made from the desired design. For the adhesive coating you need a film covering the entire motif. The screens for the adhesive coating covering the entire motif are covered with screen mesh PES monofil 12 S (= 12 threads/cm). The screen emulsion is water- and solvent resistant and additionally lacquered.

#### **Adhesive coating**

It is very important to keep in mind the thickness of the adhesive in order to obtain excellent quality regarding abrasion resistance. In order to get the flock fibers well-fixed, 20% of the fiber length are to be used to enter the surface coat of the base material. Naturally, the adhesive must also reach the textile base in order to obtain an excellent abrasion resistance, the adhesive consumption- depending on type and structure of the material. As flock adhesive we recommend an acrylic dispersion especially mixed for this purpose.

The first squeegee stroke should be effected with high pressure so the adhesive can somewhat penetrate into the fabric. The following two to four strokes with the rounded edge should squeeze a sufficient amount of glue through the screen. And in the final stroke with the sharp edge the surface the screen should be cleaned using as little pressure as possible. The result is a smooth surface and a adhesive layer of approx. 0,3 – 0,4 mm after the screen has been lifted. After removing the screen the adhesive is refilled with the rounded edge to avoid that the glue will be dry in the screenmesh.

By means of a high- voltage generator, individually adjustable for every flock colour, an electrical field is build up. By means of the high-voltage the flock fibers shoot vertically into the adhesive, where they will be fixed.

As pallets we recommend to use aluminium pallets with a perfect smooth surface. The aluminium pallets are earthed so that the electrical charge is grounded. If you work with the Flocking Table, make shure, that the Flocking Ttable is grounded.



## Flock fiber

As flock it is recommended to use Polyamide monofil fiber with 1,7/3,3dtex and a length of 0,5 – 1,0 mm. Consumption for full surface coating is approx. 80 - 100 g/m<sup>2</sup>. The climate within the flocking space is very important. It is recommended to work at a humidity in the air of 50 - 60% rel. and at temperature of approx. 20 -24°C within the room.

It is important to take care that the flock fibers, which are used a second time, are not contaminated with foreign particles (e.g. adhesive).

Also the high- voltage has a direct influence on the flocking result:

- a) high-voltage too low = flock acceleration not sufficient,  
inferior flock fiber orientation,  
insufficient fixation, inferior resistance
- b) high-voltage too high = spark flash, removing of flock fibers already  
settled into the adhesive - contamination  
of the dosing system

**Important** : The high voltage must be adjusted individually to each flock colour. For this purpose high - voltage generators with variable adjustable high-voltage are used.

## Dosing of the flock fiber quantity:

In case too much flock fibers will be dosed at once, the electrical field will be overloaded- resulting in flock fiber clouds ( also known as "beards"). This will result in the insufficient flock density, inferior fiber orientation as well as a stained flock surface. Therefore, the dosing quantity must be adjustable.

## How to create a motif:

The graphic design of a motif must " correspond to the flock fiber". The width of the lines corresponds preferably to the double flock fiber length in order to guarantee sharp lines and abrasion resistance.

## Drying process:

Advices from the adhesive manufacturer must be absolutely respected. It is necessary that the requested temperature for drying and condensating applies directly on the motif (temperature of the object.)

Only when the water is vaporized, the temperature within the adhesive coat can exceed 100°C and the curing of the adhesive can start. The water steam and the condensate must be carried out of the drier. If not, the air within the drier saturates and cannot take up any more



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humidity. This will result in the water spots and mainly in lack of abrasion resistance.

The higher the air speed, the faster the drying process.

Hebbecker Textildrucksysteme produces discontinuous as well as continuous drying and condensating equipment.

### **Cleaning:**

Final cleaning of surplus flock will be after drying and curing process. After cooling and absorption of humidity there are no problems to clean the textile.

A combination of shaking off, tapping and sucking will bring the best cleaning results. Our cleaning machine type FLOCK-CLEAN fully meets the necessary requirements.

### **Storage of the material**

#### **Flock fiber:**

The flock fibers are to be stored in the polyethylen bags in a room without direct sunbeams. The climate must correspond to the one within the flocking room- approx. 50-65% rel. air humidity with a temperature of approx. 18- 24°C. Furthermore, the advices of the flocking fiber manufactureres regarding the max. storage are to be kept in mind.

#### **Adhesive:**

It is important to close the adhesive container after use. Storage at room temperature (approx. 18-24°C.).

#### **Screens:**

The adhesive screen is to be cleaned immediately after use with water (cold water) and - if necessary- to be cleaned with an appropriate solvent, in case the surface has dried up. After the cleaning process the screens must be dried.

Last but not least we can state that with the Hebbecker machines together with the existing know-how and the corresponding materials, the flocking of textiles has been practiced for years without any problems- and for newcomers it does not mean an adventure to start with this technique.

For any additional detailed information we ask you to get in touch with the Hebbecker Textildrucksysteme company directly.

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### Adhesive:

Highly modulated-  
mesh from  
monofilament  
Polyester

Flock:  
metallized  
highly modulated  
mesh

Fabric Number	Mesh-opening	Thread diameter	Open area %
24-120	294 $\mu\text{m}$	120 $\mu\text{m}$	49,7
27-120	249 $\mu\text{m}$	120 $\mu\text{m}$	45,3
24-120	260 $\mu\text{m}$	140 $\mu\text{m}$	45



Adhesive



Flock-color 1



Flock-color 2



Flock-color 3



## SCREENPRINTING MACHINES LEADING THE WAY

ALPHA-LINE-COMBI 500 x 700 mm print-size / 400 x 500 mm flock-size

