autotype

Product Information

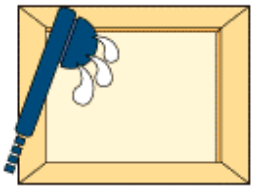
Capillex Processing

Basic working procedure:

1. Prepare mesh

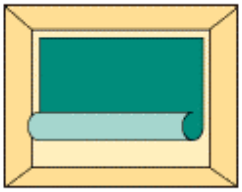
2. Adhere film to prepared mesh

3. Dry screen and strip film base support



4. Expose

5. Washout



6. Dry and retouch

Mounting the film

There are two recommended methods of mounting capillary films to the mesh - A. The Roll Down Method; and B. The Spray Method.

A. The Roll Down Method

This method can be used for any size film, but is especially recommended for medium-large format.

1. Degrease the mesh thoroughly and leave wet.

2. Roll the film (emulsion side out) around a plastic core or tube, this will prevent any

buckling or tenting of the film when handing large pieces. Any dust can be removed from the film during rolling with an antistatic duster.

3. Wet the mesh thoroughly with a gentle spray of water

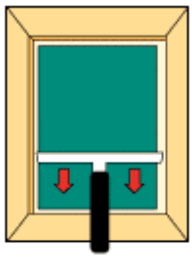
4. Position the leading edge of the film to the top of the wet mesh.

5. Unroll the film smoothly down the mesh using light pressure.

6. Lightly squeegee the print side of the film to ensure perfect contact of the film to the mesh.

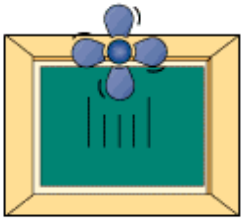
7. Turn the screen around and wipe away excess water from the top of the frame by using an absorbent cloth. This will prevent water drips and run marks caused by water dripping down from the frame edge during drying.

8. Lightly squeegee off the excess water from the squeegee side of the mesh using a light weight or window type squeegee. This will prevent patchiness of the stencil surface caused by excess water left on the mesh.



NB: If any air bubbles are present within the image areas of the screen these can easily be removed by lightly spraying with a hand held water spray bottle, though the screen must be re-squeegeed after spraying to prevent run marks.

9. Dry the screen thoroughly with a cold or warm air fan, maximum temperature 40° C (105° F)

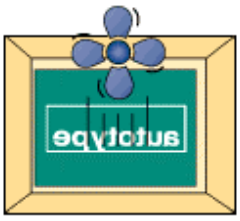


10. When the screen is completely dry, the backing sheet can be peeled away and then the screen should be dried further for 5-10 minutes. If the backing sheet release is tight the screen is still not completely dry.

11. Expose the screen and positive to any UV light source.Optimising the correct exposure is very important if the maximum stencil durability is required.

12. Washout the image with a cold or warm water spray.

13. Dry the screen



B. The Spray Method

The spray method is suitable for use on very small screens only, ie pen printers etc.

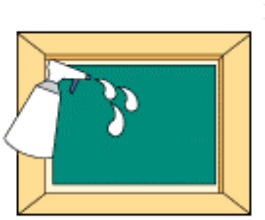
1. Degrease and dry the mesh .

2. Position the film emulsion side up on a raised pad (covered with absorbent paper).

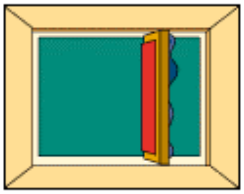
3. Lay the screen squeegee side up on top of the film and ensure intimate contact between the film emulsion and the mesh surface.

4. Using a hand held water spray bottle, evenly wet up the mesh/film to adhere the film to

the mesh.



5. Remove the excess water with a squeegee, and then dry and process the stencil as normal.



Guide to Perfect Stencils

Capillary films are adhered to the mesh by dissolving the emulsion in water, which softens it and allows it to wrap itself round the filaments. The excess water is then removed and the stencil dried.

If there are areas with no water on the mesh, or if there is foreign matter on the mesh or the film, then there will be no adhesion.

(a) Amount of water

The section on mesh preparation deals with how to prepare meshes with a view to making them receptive to stencil systems. It is very important when using capillary systems to ensure a well degreased mesh which holds a good film of water. If there is total coverage of water on the mesh, then there will be total adhesion.

It is desirable that an even stencil profile results after applying the capillary film. This is aided by removing the excess water after mounting. Although the mesh may hold a good film of water this may not be even - hence if the stencil is left to dry without squeegeeing off the water, over dissolving may occur in some areas resulting in a thinner stencil area.

Even if the water is spread evenly on the mesh, if the stencil is dried vertically the water will slowly run down the mesh and it is probable that the low region of the stencil will be thinner than the top.

When using the roll down method, after wetting the mesh, remember to wipe the frame, to

(b) Dust and dirt

Dust can never be totally excluded from capillary systems, however simple steps can be taken to minimise this.

Visually inspect the film and the mesh, prior to mounting for any dirt, if necessary wiping with an antistatic cloth ; (this can be done as the film is rolled on the core when using the roll down method).

On large formats when the roll down method is adopted, the film should not be rolled onto the wet mesh too quickly. Dust can be excluded if the film is rolled on at a steady rate.

As the roll comes down the mesh, a certain amount of water is pushed before it, a kind of 'weir effect', which tends to flush the mesh thus ridding it of dust and dirt. If the film is rolled on quickly this debris is trapped under the film and can cause off contact areas.

(c) Air bubbles

It can occasionally happen that on mounting, an air bubble is produced. The most effective way of removing this is to squeegee the base immediately after mounting the film which will push out the air bubble. Another method is to have handy a water spray, as used for spraying plants, simply spray where the bubble is and the film will be sucked onto the mesh and the whole film can then be squeegeed off.

Once you have mastered your own choice of mounting capillary films, the speed, convenience and quality of the resultant print will be self evident.

Capillex Drying

Capillex requires drying after adhering to the mesh and after washout.

The mode and temperature of drying can affect the finished result and therefore should be considered an important feature of stencil processing.

These systems all behave in a similar manner once they have been adhered to the mesh.

The main point of concern here is the temperature of drying and the length of time the stencil is exposed to this temperature.

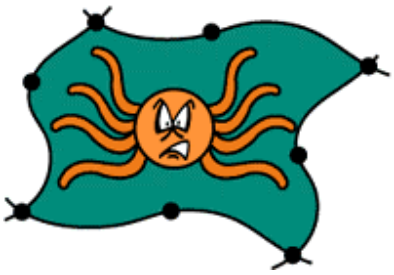
The systems can be thermally cross-linked as well as being cross-linked by UV light. Temperatures in excess of 40ºC (104ºF) can have a hardening effect on the material prior to exposure. As the drying temperature rises the effect becomes more severe, as will be the case for prolonged exposure to these temperatures.

The effect of excessive temperatures will be seen as sluggish washout and loss of resolution. In severe cases the stencil will be completely insoluble.

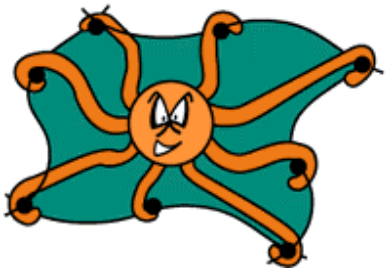
If you production demands dictate that you have to dry at 45ºC (113ºF), so be it, but make sure that the stencils are not left at high temperatures for prolonged periods.

Insufficient drying prior to exposure will also lead to a weak stencil.

The reason why drying is so important is very simple. In any direct system, prior to exposure, the Diazo sensitiser (as represented by the octopus) is totally separate from the polymer chains.



During exposure, however, the Diazo sensitiser becomes excited and it forms cross links between the reactive sites on the polymer chains. This is depicted by the legs of the octopus where they are now joined together to form a matrix or mat).



If the screen is exposed while there is still residual moisture in the system, the Diazo will react preferentially with the water molecules rather than the polymer.

This means that even if you give the screen a full exposure (that is when all the Diazo has reacted) a large portion of the Diazo will have reacted with water. The result is a softer stencil which will break down.

When the base peels quietly and without resistance, the stencil is dry.