



## Capillary Film Troubleshooting

Pinholes	
Possible Cause	Potential Solution
<b>Stencil underexposed</b>	Use exposure calculator to determine proper exposure time. Check lamp consistency and level of output.
<b>Dust on exposure glass, film positive or capillary film</b>	Clean glass and film positive. Use lint free cloths. Be sure capillary film is free of dust before adhering.
<b>Residual moisture in stencil from insufficient drying and/or excessive humidity</b>	Allow additional drying time before exposing stencils. Reduce humidity with dehumidifier. Increase exposure time in humid conditions. Do not dry unexposed screen with extremely wet screens.
<b>Mesh preparation insufficient</b>	Use recommended degreasers/wetting agents. Completely rinse entire frame. Abrade new monofilament fabric to increase adhesion. Avoid touching degreased mesh. Do not allow degreased screens to sit for extended time.
<b>Capillary film too thin for mesh count</b>	Use recommended film and mesh combinations.
<b>Stencil washout incorrect</b>	Avoid excessive water pressure. Do not use hot water in excess of 100 degrees F (38 C). Wash primarily from the substrate side of the screen. Do not wash screen for long periods of time.
<b>Fabric too dry during film application</b>	Rinse fabric just prior to adhering film.
<b>Emulsion incompatible with ink</b>	Select emulsion suitable for an ink system, i.e. water resistant stencil for water based inks.
<b>Degreased screen exposed to compressed air</b>	Avoid using compressed air to dry screens, it may contain water, dust or oil. Use a screen vacuum to speed drying.
<b>Aggressive solvents used on press</b>	Replace aggressive solvents and minimize wash-ups. Retard inks to prevent drying in screen.

## Poor definition (sawtooth/lack of edge sharpness)

Possible Cause	Potential Solution
<b>Stencil underexposed or extremely overexposed</b>	Use exposure calculator to determine proper exposure time. Check lamp consistency and level of output
<b>Contact between stencil and positive poor</b>	Check vacuum. Check vacuum blanket or hoses for leaks. Check bleeder cord position. Check screen frames for warping.
<b>Film positive edge quality and/or density poor</b>	Use film with a sharp hard image edge. Ensure film positive has a solid density of 3.5 or higher.
<b>Residual moisture in stencil from insufficient drying and/or excessive humidity</b>	Allow additional drying time before exposing stencils. Reduce humidity with dehumidifier. Increase exposure time in humid conditions. Do not dry unexposed screen with extremely wet screens.
<b>Mesh count too coarse for image detail</b>	Switch to a higher mesh count or finer thread diameter.
<b>Stencil dried with excessive heat</b>	Do not exceed 100 degrees F (38 C) when drying stencils.
<b>White mesh scattering light</b>	Switch to dyed mesh and test to determine new exposure.
<b>Capillary film fogged (pre-exposed)</b>	Handle capillary film in yellow safelight. Store in light tight container.
<b>Stencil washout incorrect</b>	Avoid excessive water pressure. Do not use hot water in excess of 100 degrees F (38 C). Wash primarily from the substrate side of the screen. Do not wash screen for long periods of time.
<b>Capillary film too thin or thick for mesh count</b>	Use recommended film and mesh combinations.
<b>Squeegee pressure excessive when mounting capillary film</b>	Use lighter pressure when mounting capillary film.
<b>Excess water not removed quickly enough after film mounted</b>	Squeegee excess water from screen immediately after mounting film to wet fabric.

<b>Poor resolution or loss of detail</b>	
<b>Possible Cause</b>	<b>Potential Solution</b>
<b>Capillary polyester carrier not removed before exposure</b>	Remove carrier sheet before exposure.
<b>Poor contact between stencil and positive</b>	Check vacuum or weights. Check for warped screen frames. Check for leaks in vacuum blanket or hoses. Check for proper bleeder cord position.
<b>Mesh count too coarse for image detail</b>	Switch to a higher mesh count or finer thread diameter.
<b>Capillary film too thick for mesh count</b>	Use recommended film and mesh combinations.
<b>Film positive density poor</b>	Remake film positive with solid density of 3.5 or higher.
<b>Stencil dried with excessive heat</b>	Do not exceed 100 degrees F (38 C) when drying stencils.
<b>Light undercutting from light source</b>	Point light source too close, move to distance equal to diagonal of the screen frame. Replace diffused light source with point light source.
<b>White mesh scattering light</b>	Switch to dyed mesh and test to determine new exposure.
<b>Capillary film old or stored in hot/humid conditions</b>	Use fresh capillary film. Follow manufacturer storage times and conditions.
<b>Stencil overexposed</b>	Use exposure calculator to determine proper exposure time.
<b>Emulsion on incorrect side of positive</b>	Remake film positive emulsion up, right-reading to contact the stencil during exposure.
<b>Coated screen stored too long</b>	Store coated screens for no more than 1-2 weeks.
<b>Coated screen pre-exposed</b>	Store coated screens in dark cool dry area. Store stencil material in light tight containers. Use yellow safe lights around unexposed screens.
<b>Stencil washout incorrect</b>	Avoid excessive water pressure. Do not use hot water in excess of 100 degrees F (38 C). Wash primarily from the substrate side of the screen. Do not wash screen for long periods of time.
<b>Film positive layered excessively</b>	Re-image positive into one layer of film.

<b>Premature stencil breakdown on press</b>	
<b>Possible Cause</b>	<b>Potential Solution</b>
<b>Stencil underexposed or extremely overexposed</b>	Use exposure calculator to determine proper exposure time. Check lamp consistency and level of output.
<b>Residual moisture in stencil from insufficient drying and/or excessive humidity</b>	Allow additional drying time before exposing stencils. Reduce humidity with dehumidifier. Increase exposure time in humid conditions. Do not dry unexposed screen with extremely wet screens.
<b>Mesh preparation insufficient</b>	Use recommended degreasers/wetting agents. Completely rinse entire frame. Abrade new monofilament fabric to increase adhesion. Avoid touching degreased mesh. Do not allow degreased screens to sit for extended time.
<b>Fabric too dry during film application</b>	Rinse fabric just prior to adhering film.
<b>Capillary film too thin for mesh count</b>	Use recommended film and mesh combinations.
<b>Capillary film old or stored in hot/humid conditions</b>	Use fresh capillary film. Follow manufacturer storage times and conditions.
<b>Capillary film fogged (pre-exposed)</b>	Handle capillary film in yellow safelight. Store in light tight container.
<b>Stencil inappropriate for water-based inks</b>	Use water-resistant or waterproof stencils for water-based inks.
<b>Squeegee pressure excessive</b>	Reduce squeegee pressure. Reduce need for excessive pressure with higher screen tensions and lower off-contact.
<b>Off-contact excessive</b>	Decrease off-contact distance. Reduce need for high off-contact with higher screen tensions.
<b>Floodbar pressure excessive</b>	Reduce floodbar pressure.
<b>Relative humidity excessive</b>	Use moisture resistant dual-cure emulsion. Use dehumidifiers to help control press room conditions.
<b>Aggressive solvents used on press</b>	Replace aggressive solvents and minimize wash-ups. Retard inks to prevent drying in screen.
<b>Screen tension insufficient</b>	Use screens with higher tension.
<b>Stencil not dry before printing</b>	Thoroughly dry the stencil prior to printing.

<b>Emulsion soft or washes/peels off mesh during washout</b>	
Possible Cause	Potential Solution
<b>Stencil underexposed</b>	Use exposure calculator to determine proper exposure time. Check lamp consistency and level of output.
<b>Residual moisture in stencil from insufficient drying and/or excessive humidity</b>	Allow additional drying time before exposing stencils. Reduce humidity with dehumidifier. Increase exposure time in humid conditions. Do not dry unexposed screen with extremely wet screens.
<b>Capillary film adhered improperly</b>	Follow manufacturer instruction on applying film.
<b>Mesh preparation insufficient</b>	Use recommended degreasers/wetting agents. Completely rinse entire frame. Abrade new monofilament fabric to increase adhesion. Avoid touching degreased mesh. Do not allow degreased screens to sit for extended time.
<b>Stencil washout incorrect</b>	Avoid excessive water pressure. Do not use hot water in excess of 100 degrees F (38 C). Wash primarily from the substrate side of the screen. Do not wash screen for long periods of time.
<b>Capillary film old or stored in hot/humid conditions</b>	Use fresh capillary film. Follow manufacturer storage times and conditions.
<b>Film positive clear density too high</b>	Remake film positive with density of 0.3 or less in clear areas.

<b>Washout difficult</b>	
Possible Cause	Potential Solution
<b>Stencil dried with excessive heat</b>	Do not exceed 100 degrees F (38 C) when drying stencils.
<b>Capillary film old or stored in hot/humid conditions</b>	Use fresh capillary film. Follow manufacturer storage times and conditions.
<b>Coated screen stored too long</b>	Store coated screens for no more than 1-2 weeks.
<b>Coated screen pre-exposed</b>	Store coated screens in dark cool dry area. Store stencil material in light tight containers. Use yellow safe lights around unexposed screens.
<b>Film positive density poor</b>	Remake film positive with solid density of 3.5 or higher.
<b>Capillary polyester carrier not removed before exposure</b>	Remove carrier sheet before exposure.
<b>Stencil overexposed</b>	Use exposure calculator to determine proper exposure time.

## Scumming or thin haze in image areas after washout

Possible Cause	Potential Solution
<b>Stencil underexposed</b>	Use exposure calculator to determine proper exposure time. Check lamp consistency and level of output.
<b>Film positive density poor</b>	Remake film positive with solid density of 3.5 or higher.
<b>Stencil washout insufficient</b>	Wash out screen thoroughly to remove all unexposed emulsion.
<b>Residual moisture in stencil from insufficient drying and/or excessive humidity</b>	Allow additional drying time before exposing stencils. Reduce humidity with dehumidifier. Increase exposure time in humid conditions. Do not dry unexposed screen with extremely wet screens.
<b>Contact between stencil and positive poor</b>	Check vacuum. Check vacuum blanket or hoses for leaks. Check bleeder cord position. Check screen frames for warping.
<b>Coated screen pre-exposed</b>	Store coated screens in dark cool dry area. Store stencil material in light tight containers. Use yellow safe lights around unexposed screens.
<b>White mesh scattering light</b>	Switch to dyed mesh and test to determine new exposure.

<b>Poor adhesion of stencil to mesh</b>	
<b>Possible Cause</b>	<b>Potential Solution</b>
<b>Stencil underexposed</b>	Use exposure calculator to determine proper exposure time. Check lamp consistency and level of output.
<b>Residual moisture in stencil from insufficient drying and/or excessive humidity</b>	Allow additional drying time before exposing stencils. Reduce humidity with dehumidifier. Increase exposure time in humid conditions. Do not dry unexposed screen with extremely wet screens.
<b>Fabric too dry during film application</b>	Rinse fabric just prior to adhering film.
<b>Mesh preparation insufficient</b>	Use recommended degreasers/wetting agents. Completely rinse entire frame. Abrade new monofilament fabric to increase adhesion. Avoid touching degreased mesh. Do not allow degreased screens to sit for extended time.
<b>Capillary film old or stored in hot/humid conditions</b>	Use fresh capillary film. Follow manufacturer storage times and conditions.
<b>Capillary film fogged (pre-exposed)</b>	Handle capillary film in yellow safelight. Store in light tight container.
<b>Stencil washout incorrect</b>	Avoid excessive water pressure. Do not use hot water in excess of 100 degrees F (38 C). Wash primarily from the substrate side of the screen. Do not wash screen for long periods of time.

<b>Stencil brittle</b>	
Possible Cause	Potential Solution
<b>Stencil dried with excessive heat</b>	Do not exceed 100 degrees F (38 C) when drying stencils.
<b>Capillary film old or stored in hot/humid conditions</b>	Use fresh capillary film. Follow manufacturer storage times and conditions.
<b>Relative humidity extremely low</b>	Maintain a 40-60% relative humidity.
<b>Stencil extremely overexposed</b>	Use exposure calculator to determine proper exposure time.

<b>Capillary stencil patchy</b>	
Possible Cause	Potential Solution
<b>Mesh preparation insufficient</b>	Use recommended degreasers/wetting agents. Completely rinse entire frame. Abrade new monofilament fabric to increase adhesion. Avoid touching degreased mesh. Do not allow degreased screens to sit for extended time.
<b>Application techniques poor</b>	Apply even pressure with roll down method. Use flat surface for board mounting method.
<b>Drying conditions poor</b>	Wipe the inside edge of frame after roll-down mounting. Dry frame horizontally, substrate side up to protect emulsion from drips and splashes.

<b>Air pockets appear during film application</b>	
Possible Cause	Potential Solution
<b>Dust/dirt on capillary film</b>	Ensure capillary film is free of dust before adhering.
<b>Capillary film kinked</b>	Handle film carefully.
<b>Fabric too dry during film application</b>	Rinse fabric just prior to adhering film.
<b>Mesh preparation insufficient</b>	Use recommended degreasers/wetting agents. Completely rinse entire frame. Abrade new monofilament fabric to increase adhesion. Avoid touching degreased mesh. Do not allow degreased screens to sit for extended time.
<b>Application techniques poor</b>	Apply even pressure with roll down method. Use flat surface for board mounting method.
<b>Screen tension insufficient</b>	Use screens with higher tension.



<b>Screen image does not match positive size or proportion</b>	
Possible Cause	Potential Solution
<b>Frames warped</b>	Repair or replace warped frames.
<b>Screen tension insufficient</b>	Use screens with higher tension.
<b>Vacuum pressure too high</b>	Repair any tears or holes in vacuum blanket. Follow manufacturer setting for vacuum pressure.
<b>Positives expanding from heat during exposure</b>	Use more stable film positives.
<b>Stencil dried with excessive heat</b>	Do not exceed 100 degrees F (38 C) when drying stencils.
<b>Film positive layered excessively</b>	Re-image positive into one layer of film.

<b>Reclaiming difficult</b>	
Possible Cause	Potential Solution
<b>Stencil underexposed</b>	Use exposure calculator to determine proper exposure time. Check lamp consistency and level of output.
<b>Stencil locked in from fast-flashing solvents</b>	Use safety solvents to remove ink from screens. Avoid acetone, lacquer thinner containing toluene or ketones, and strong screen openers.
<b>High pressure washer not used</b>	Use a high pressure washer for reclaiming.
<b>Screen stored for extended period of time</b>	Reclaim stencils as soon as possible.
<b>Reclaiming chemistry incompatible</b>	Use recommended solvents and chemistry for reclaiming.