PAD PRINT TROUBLESHOOTING

1. Blurred or sharpness problem
Unsharp printing means blurred reproduction of lines or lettering.

2. Ink does not meet adhesion requirements
This problem frequently occurs because the material of the product is unknown or the wrong type of ink is used.

3. Small pinholes are apparent
If they're large and consistently in the same place, check the pad and cliché for damage. Replace if necessary.

4. Colors transferring between pads on multi-color jobs.
In fast multicolor printing sequences a subsequent pad can remove a previous color.
This happens most often in larger print motifs on substrates not etched by the thinner. This usually occurs in connection with multi-station conveyors or turntables when using slow drying inks. This problem can be eliminated by initiating print and cliché pauses.

5. Uneven ink thickness
Usually occurs with larger areas of ink coverage.

6. Distortion in printed image
Distortion usually occurs when a printing on deep or curved surfaces.

7. Opacity of ink is poor
This is usually a direct result of printing on dark substrates with a single print. In these situations a second "hit" will usually bring the image up to a desired opacity level. Otherwise, a background print in white, or sometimes silver, will lay down a sufficient level of ink to make a brighter image.

8. Smudged image
This occurs when ink is too thin or pad slips during print. Slippage of pad during printing can be caused by too hard a pad, poor fixtures, angle of part in fixture, or excess pad pressure.

9. Mis-registration of colors multi-color print

10. Image appears blotchy
A dry appearance or voids in the print is usually caused by ink which had dried in the image area of the cliché.

11. Ink sticks to pad surface
If the pad picks up the image cleanly but does not drop-off entire image during print stroke, voids will appear in image.

12. Hairs on edges of image
This can be caused by a static charge in the part, but can also be due to other factors such as pad shape and improper ink viscosity.

13. Fine lines begin to close up

This problem usually occurs in reverse images where copy has dropped out of the artwork.

1. Blurred or sharpness problem:

Unsharp printing means blurred reproduction of lines or lettering.

Probable Cause	Possible Solution
Pad	
Too soft.	Use a harder pad.
Wrong shape.	Use a different shape.
Cliché	
Inaccurate etch.	make a new cliché.
Etching is too deep.	Etch a new cliché with less depth.
Wrong type of cliché.	Use the suitable cliché type(e.g. steel in place of polymer).
Wrong type of screen.	Test a new cliché with a different screen.
Ink	
Ink is too thick.	Add more thinner.
Ink is too thin.	Reduce the amount of thinner.
Slow drying.	Use a faster drying thinner or cliché pause.
Material	
Dirty surface.	Pre-clean.
Rough, grainy surface.	Switch over to other material, if possible, or try a harder pad.
Large differences in height.	Use special shaped pads and pad mounting devices.
Printing near edges.	Fixtures must support the pad to prevent slippage.
Other	
Work piece fixtures are not stable enough.High speed causes pad vibration.	Make new fixtures.Decrease speed. If necessary, pause at front position before releasing the ink film to avoid vibrations of the pad during printing.

2. Ink does not meet adhesion requirements

This problem frequently occurs because the material of the product is unknown or the wrong type of ink is used.

Probable Cause	Possible Solution
Pad	
Too much silicone on surface.	Clean new pads with alcohol beforeuse.
Cliché	
Etched too deep.	Remake cliché deeper.
Ink	
Wrong type of ink.	Use the suitable ink according to thetechnical data sheet.
Bi-Component?	Use bi-component ink with hardener.
Incorrect ratio of ink to hardener.	Remix ink with correct ratio by weighing ink and hardener.
Material	
Dirty surface.	Preclean with alcohol.
Other	
No/insufficient pretreatment.	Check pretreatment procedure. If necessary, repeat.
Required cure time is not met.	Leave parts for longer period of time before testing.
No/insufficient after-treatment.	Use heat tunnel and in some situations flame parts.

3. Small pinholes are apparent

If they're large and consistently in the same place, check the pad and cliché for damage. Replace if necessary.

Probable Cause	Possible Solution
Pad	
Surface is damaged.	Replace pad or adjust so that damaged area won't interfere with image.
Pad is too flat.	Use pointed shape pad.
Too soft.	Use a harder pad.
Cliché	

Bad etching due to error or dust during exposure stage.	Remake.
Ink	
Ink is too Thick.	Add more thinner.
Material	
Rough surface.	Use a firmer pad.
Parts dirty.	Clean.
Other	
Ink contaminated with silicone or oils.	Replace with new ink.

4. Colors transferring between pads on multi-color jobs.

In fast multicolor printing sequences a subsequent pad can remove a previous color.
This happens most often in larger print motifs on substrates not etched by the thinner. This usually occurs in connection with multi-station conveyors or turntables when using slow drying inks. This problem can be eliminated by initiating print and cliché pauses.

Probable Cause	**Possible Solution**
Pad	
Porous, worn surface.	Replace pad.
Cliché	
Etching is too deep.	Etch a new cliché with less depth.
Wrong percentage and LPI of screen.	Test a new cliché with a different screen. (higher DPI screen for smaller areas & detail)
Ink	
Ink has too much thinner.	Add more pure ink to cup or inkwell.
Ink is drying too slow.	Use a faster drying thinner, blow air, or use pad delays/ pauses to give inks time to dry.
Material	
Very smooth surface. Substrates which cannot be etched by the thinner (e.g., glass) are especially problematic.	Use hot/ cool air blown onto part between colors, or use pauses before printing.
Substrates contaminated with oils.	Clean parts prior to printing.

5. Uneven ink thickness

Usually occurs with larger areas of ink coverage.

Probable Cause	Possible Solution
Pad	
Wrong shape.	Use a different shape.
Cliché	
Wrong cliché type.	Use steel cliché to prevent ink "scooping".
Wrong etching depth.	Make a new cliché controlling depth.
Wrong type of screen.	Test a new cliché with a different screen.
Wrong orientation.	Turn long lines at an angle.
Ink	
Too thin.	Reduce the amount of thinner.
Too thick.	Add more thinner.
Insufficient mixing of ink andadditives.	Mix the ink thoroughly before puttingit into the ink tray or cup.
Material	
Odd shaped surface.	Use suitable pad.
Other	
Doktor blade too soft.	Use firmer doktor blade or convert to inkcup system.

6. Distortion in printed image

Distortion usually occurs when a printing on deep or curved surfaces.

Probable Cause	Possible Solution
Pad	
Wrong shape.	Use a different shape.
Too soft or too hard.	Use different hardness.
Image too close to pad edge.	Move or replace pad.
Cliché	

Etched too deep.	Coupled with thin ink, the smudging caused isoften mistaken for distortion.
Ink	
Etched too deep.	Causes smudging (see above)
Material	
Moves or collapses.	usare supporti speciali o tamponi
Other	
Unsuitable work piece fixtures.	Modify the fixtures to achieve supporton all positions of the product.
Fixtures move.	Check fixtures.
Printing on angle.	Change fixture angle.

7. Opacity of ink is poor

This is usually a direct result of printing on dark substrates with a single print. In these situations a second "hit" will usually bring the image up to a desired opacity level. Otherwise, a background print in white, or sometimes silver, will lay down a sufficient level of ink to make a brighter image.

Probable Cause	Possible Solution
Pad	
Porous and rough.	Replace pad.
Too flat and soft causing insufficient inkrelease.	Use a firmermore pointed pad.
Cliché	
Etching depth is too low.	Etch a deeper cliché.
Wrong type of screen.	Test a new cliché with a different screen.
Wrong type of cliché.	Use a different type of cliché.
Ink	
Ink too thin.	Thicken ink.
Ink not transferring completely.	Use print pause or air blower to partially dryink for proper release.
Material	
Image not brilliant enough due to darkness of parts.	Use double hit to lay down additional layer.

8. Smudged image

This occurs when ink is too thin or pad slips during print. Slippage of pad during printing can be caused by too hard a pad, poor fixtures, angle of part in fixture, or excess pad pressure.

Probable Cause	Possible Solution
Pad	
Too hard.	Use a softer pad.
Too small in relation to the image.	Use a larger pad.
Prints over edges.	Adjust the pad stroke and/or use fixture with more support.
Cliché	
Depth too deep.	Make a new cliché.
Wrong type of cliché, may need screen.	Test a new cliché with a screen or use a different type of screen.
Ink	
Too thin.	Add pure ink to thicken.
Slow drying.	Use a faster thinner.
Material	
Very uneven surface.	Use special shaped pads or adjust pad positions.
Other	
Fixtures are unstable.	Remake.
Work piece fixtures are not stable enough.	Remake.

9. Mis-registration of colors multi-color print

Probable Cause	Possible Solution
Pad	
Pads are not mounted correctly.	Adjust pads to pick up images in the exact same place.
Unequal shapes.	Use equally shaped pads.
Different hardnesses.	Use pads of the same durometer.

Cliché	
Images are not in registration.	Re-register artwork and etch new cliché's.
Ink	
Image spreads more in one color than in another.	Correct ink viscosity to prevent incorrect dot gain.
Material	
Parts collapse (e.g. plastic bottles).	Use a more supportive fixture.
Other	
Work piece fixtures are not stable enough.	Control. Make new fixtures if necessary.
Conveyor, shuttle or turntable moveinaccurately.	Establish more accurate control of indexing.
Fixtures are insufficiently attached.	Fasten fixture screws.

10. Image appears blotchy

A dry appearance or voids in the print is usually caused by ink which had dried in the image area of the cliché.

Probable Cause	Possible Solution
Pad	
Too flat.	Use a more pointed shape pad.
Porous, worn pad.	Replace pad.
Cliché	
Etching depth is too shallow.	Make a new cliché with deeper etch.
Wrong type of etch.	Make new cliché with screened areas.
Ink	
Too thick.	Add thinner.
Ink dried in etching.	Clean the cliché with thinner.
Material	
Contaminated with oils.	Clean with alcohol.
Other	
Machine speed too low.	Increase speed of the machine.

11. Ink sticks to pad surface

If the pad picks up the image cleanly but does not drop-off entire image during print stroke, voids will appear in image.

Probable Cause	Possible Solution
Pad	
Too soft.	Use a harder pad.
Wrong shape.	Use a more pointed shape.
Roughened porous surface.	Replace with a new pad.
Cliché	
Etch is too shallow.	Etch a deeper cliché if ink is drying on pad.
Etch is too deep.	Etch a new cliché with less depth, or use cliché pause to allow ink time to partially dry on cliché.
Ink	
Dried on the pad.	Use retarder or more thinner.
Too wet on the pad -does not film well.	Use a faster thinner or pause on the print stroke.
Material	
Dirty surface (grease, oil, releaseagents, hand sweat).	Preclean. Depending on the grade ofdirtiness, with alcohol, if necessary.Wear gloves during printing.
Other	
Room temperature is too high.	The room temperature is best at 64-68 °F.
Pad speed too low.	Increase speed - in the case of ink drying on the pad.
Pad speed too high.	Use pause on print stroke in case of ink too wet to allow more drying time, or use cool/hotair.

12. Hairs on edges of image

This can be caused by a static charge in the part, but can also be due to other factors such as pad shape and improper ink viscosity.

Probable Cause	Possible Solution
Pad	
Too flat.	Use a more pointed shape.

Cliché	
Etch is too deep.	Remake a cliché with less depth.
Wrong type of screening or no screen.	Use a different screen.
Ink	
Too thick.	Add more thinner.
Ink is drying too slow.	Use a high speed thinner.
Material	
Static charge.	Use a de-ionizer or increase humidity in shop.
Other	
Air moisture is too low.	Increase air moisture up to 60-80%.
Cycle time is too high.	Reduce printing speed.
Pad pressure too high forcing ink outward.	Decrease pressure.

13. Fine lines begin to close up

This problem usually occurs in reverse images where copy has dropped out of the artwork.

Probable Cause	Possible Solution
Pad	
Too hard.	Use a softer pad.
Roughened porous surface.	Use a new pad.
Cliché	
Etch depth is too deep.	Make a new cliché with lower etching depth.or use pause to allow ink set/drying time in cliché.
First exposure of plate-making process is too long.	Make new cliché with lower exposure times.
Wrong type of etch.	Use a different type of cliché with screened image area.
Ink	
Ink too thin.	Reduce the amount of thinner.
Too slow; ink smears out.	Use a faster thinner, or pause above cliché.
Material	

Too smooth (e.g. glass)	Clean thoroughly, to aid in "catching" the ink.
Other	
Pad stroke is adjusted too high. Causes ink tobe forced out of etched areas.	Reduce pad stroke.