# HINTS & TIPS

TEXTILE SOLUTIONS

## SERICOL Industrial Workwear Transfer System

### What are Industrial Workwear Transfers?

Industrial Workwear Transfers are the product of an indirect printing method, specifically designed for applications where very high resistance levels are required. Rather than printing directly onto the garment, inks are printed onto specialised transfer paper, then transferred with a heat press onto the garment. For some applications excellent resistance to boil washing can be attained.

The production of Industrial Workwear Transfers involves the use of two distinct systems: a solvent-based ink and a water-based adhesive. Both systems are capable of air drying prior to transfer, although increased production speed can be maintained by Jet / IR drying at elevated temperatures.

### Printing Guidelines

**Paper**
Release coated paper is recommended. The coating on the transfer sheet helps prevent the ink from adhering to the paper. The gloss levels and coating on the paper help determine the resultant print.

**Colours (Inks)**
The recommended ink system is Nylotex NX. Maximum adhesion and wash-fastness is achieved by catalysing the ink with Nylobag Catalyst NB386. Typically levels of catalyst added are up to 10%. Additions of up to 1% Flow Additive can also be added to eliminate pinholing if required.

**Meshes:** Typical recommendation for printing Nylotex colours is through mesh counts of 34-62 T. The best stencil recommendation when printing Nylotex is Dirasol 916 or Supertex emulsion.

**Drying:** Inks are dried either by air drying (at ambient temperature for 24 hours) or by force drying (Jet / IR at up to 80°C). Inks should always be completely dried before the adhesive is applied. Incomplete drying can lead to solvent entrapment, causing the ink film to blister. If inks are over-dried, then the ink systems fully cross link. This cross linking leads to poor inter-coat adhesion and resultant poor wash fastness.

**Opacity:** Maximum opacity is achieved by backing-up with Nylotex White NX021 catalysed with 10% NB386.

### Adhesive

XTA05 Special Transfer Adhesive (water-based) has been specifically designed for backing up solvent-based systems.

**Meshes:** The adhesives are capable of printing through 21-43 meshes. However, for maximum adhesion printing through a 21.160 PW mesh is recommended.

**Drying:** The Adhesive layer can either dry at ambient conditions (Air dry for 24 hours), or can be force dried by use of Jet / IR (Up to 80°C).

### Transfer

This is performed with a heat press, typically set at 190 - 200°C. The garment is placed on the lower platten of the heat press and the transfer is placed on top of the garment, print side down. The press is closed (typically at pressures of 60 psi) and left for 15-30 seconds. After the pressure has been released, the garment is carefully removed from the press with the print still in place. When the print is fully cooled, the transfer paper is carefully peeled from the garment, leaving the print in place.

Transfers will give good resistance to multiple industrial laundering cycles on many natural and synthetic fabrics. **Transfers are not suitable for use on Nylon.**

## Troubleshooting

| Problem | Reason / Solution |
|---|---|
| Ink does not release from the paper. | a. Insufficient transfer dwell time. Increase dryer temperature and dwell time.<br>b. Incorrect side of transfer paper being used. |
| Poor registration. | a. Paper shrinkage. Pre-shrink paper prior to printing by passing through dryer. Maintain paper temperature by placing in warm oven or air tight bags. |
| Poor adhesion to garment. | a. Insufficient transfer pressure.<br>b. Insufficient transfer temperature.<br>c. Insufficient transfer dwell time<br>d. Adhesive layer not fully dried before transfer.<br>e. Adhesive level to low, use coarser mesh. |
| Poor adhesion between ink layers. | a. Ink film not fully dried. Increase drying period between ink layers. before backing up with adhesive.<br>b. Ink film over dried. Reduce drying period. |
| 'Bubbling' or flat areas in transferred prints. | a. Solvent trapped in ink film. |

## Tips

1. To prevent the Nylotex ink drying in the screen during extreme hot shop conditions, up to 10% ZE806 Nylo Retarder can be added to improve stability.
2. To ease removal of ink after production, the coating of a layer of OAA03 Screen Gel Clear helps prevent the ink film from drying in the mesh, prior to Ink Stain and Stencil Removal.
3. For heat sensitive materials, the Workwear Transfer System will transfer with reduced adhesion down to 150°C, although for maximum adhesion, transfers should take place at 190-200°C for 15-30 seconds.
4. Test transfers for wash fastness 24 hours after application, to ensure full cross-linking has occurred.

## Summary

Using the Workwear Transfer System can be of enormous benefit, to the wash-fastness of garments, the ease of use, and the speed of production. It should be remembered, however, as with all printing techniques, that it requires testing and practice to achieve the best results.

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