

# APPLICATION TIPS



Version 1.7

## STAHL'S®

**CAD CUT HEAT TRANSFER MATERIALS**

[www.stahls.com/heat-transfer-material](http://www.stahls.com/heat-transfer-material)



### Introduction

This application tip will explain the laser marking and cutting process with Stahls' CAD-CUT® heat transfer materials. Using laser technology dramatically increases the level of detail you can achieve with heat transfer materials, and in most cases it completely eliminates weeding. Stahls' CAD-CUT® materials are PVC-free, laser-friendly and child-safe. Use heat transfer materials with a laser system to customize a variety of apparel including sports jerseys, T-shirts, performance apparel, bags, jackets, and more!

### Overview

Stahls' CAD CUT heat transfer materials are available in many different styles and color options.

Thermo-FILM®  
Fashion-FILM®  
Premium Plus™  
SuperTEK Matte Clear™  
Perma-Twill™

3M™ Scotchlite™ 5807  
Glow  
SportFilm Lite™  
Chameleon  
Hologram

FLOCK  
Fashion-FILM® Electric  
Glitter Flake™  
Flock  
Gorilla Grip® II

### Necessary Options and Accessories

**9.3µm Co2 laser 30 watts and up for best results** (10.6µm laser will work with only some colors)

Cutting Table

1-Touch Laser photo Software (For processing photos).

### Need to know

Not all materials or colors will work well with all processes. Glitter material may not be suitable for photo imaging, and certain film colors may not show well on light-colored fabric with the 10.6µm co2 laser wavelength causing engraved areas to possibly show "shadowing". Due to the variety of colors and material types, testing is recommended before beginning any kind of production.

### Processes in tip sheet

Page 2 - Laser Marking

Page 3 - Laser Photo Imaging

Page 4 - Laser Cutting

Page 5 - Multi-Color

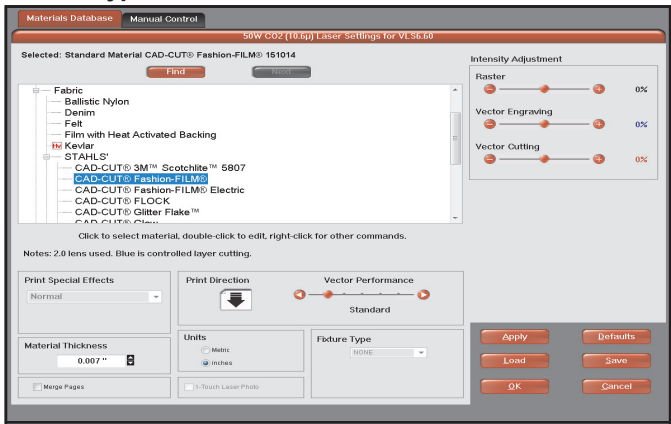
Page 6 - Production Runs/ Reference web-links links

# STAHL'S' LASER MARKING PROCESS

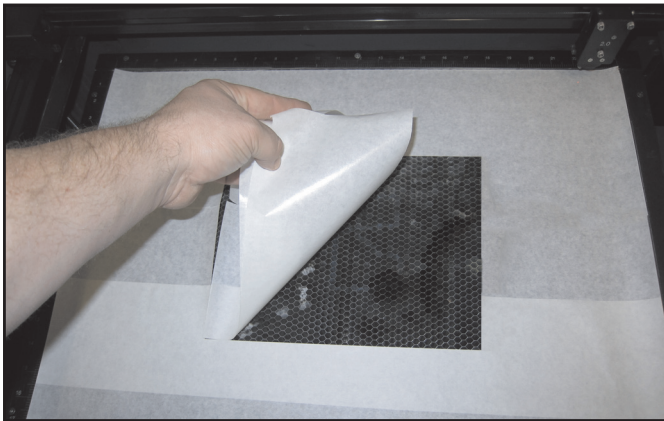
Process works with: Fashion-FILM®, Fashion-FILM® Electric, Glow, Premium Plus and SportFilm Lite™ will require the testing on lighter fabrics based on the material type and color selection.



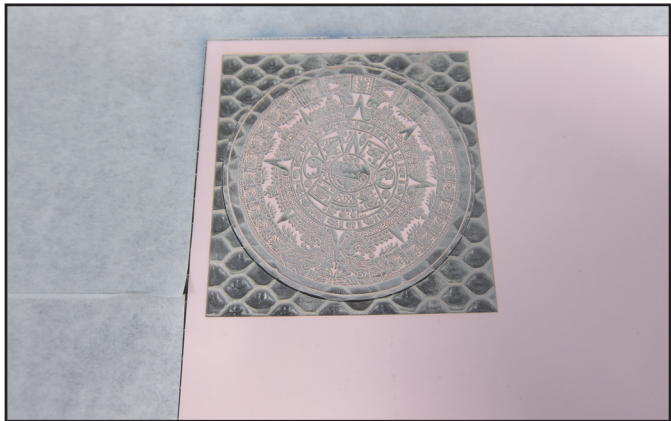
1. Design graphic to for engraving Stahls' Cad Cut® materials, Invert and Mirror image, placing a red cut line.  
 Note: The laser will remove all the black color retaining the white to be heat applied.



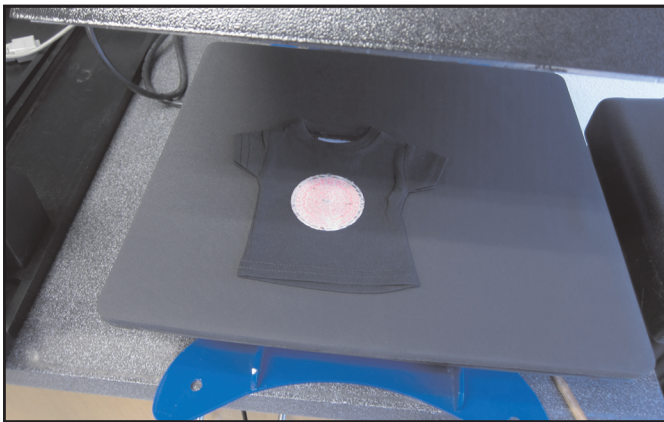
2. Print file to ULS laser system. Select Stahls' material from the ULS database by choosing "Fabric/Stahls." Then select the desired material.



3. Use Downdraft Cutting Table accessory. Cover cutting table with adhesived-backed paper to increase vacuum effect. Use the laser to cut out location where the material is placed.  
 Note: The upper exhaust may all need to be covered in order to increase the vacuum on the table.



4. Using the vacuum to hold the material down, start file to engrave and cut the material with the laser system.  
 Note: Engraving residue will not effect the transfer.



5. Remove the engraved material from laser. Turn it over, engraving face down, and place on the garment. Then heat press using suggested Stahls' settings. Remove from heat press and hot/warm peel.



6. Finished result, no weeding

Note: Not all colors and materials will work with this process. Some film color/fabric combinations may show "shadowing" in engraved areas.

# STAHL'S LASER PHOTO PROCESS (Not all colors are suited to this process)

Process works with: Fashion-FILM®, Fashion-FILM® Electric, Glow, Premium Plus™ and SportFilm Lite™ will require the testing on lighter fabrics based on the material type and color selection.



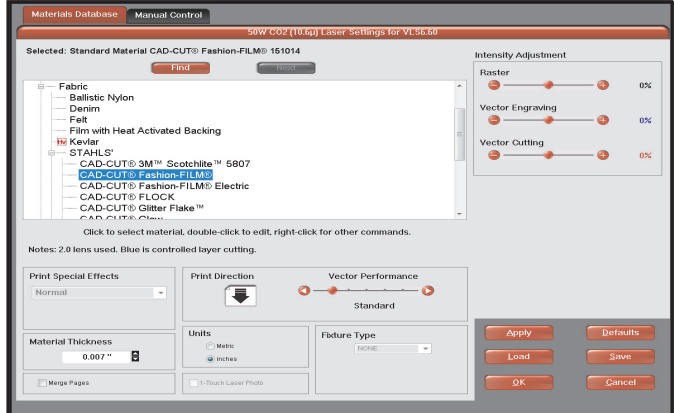
1. Select any digital photo or image to be placed on apparel.



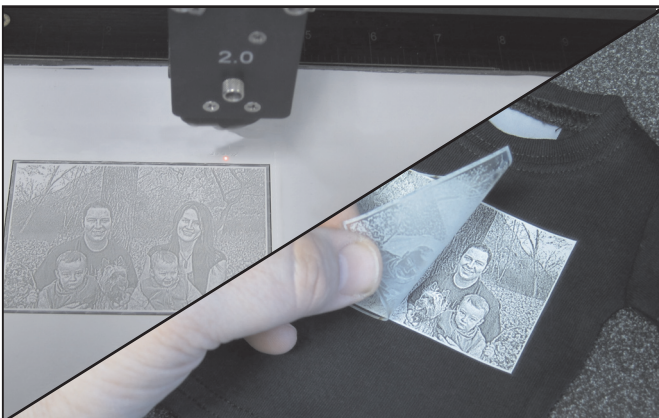
2. Open digital image in 1-Touch Laser Photo. Crop/size the image to desired size, then mirror image. Next select the Stahl's CAD-CUT "dark" or "light" filter. Note: Dark will invert the image, Light will not invert



3. Save filtered image. Next open that image in the design software. Place a black box behind photo and a red cut line where image will be cut out. Note: A normal filtered image will appear as a coarse



4. Print file to Universal laser system, and select Stahl's material from the ULS database. Choose "Fabric/Stahls" and select desired material.



5. Engrave and cut image with laser. Heat apply image and warm/hot peel carrier film (backing). Note: Use vacuum table to process material shown on Page 2. Recommend using a cover sheet on top of film for transfer, will prevent design from sticking to the top of the heat press.



6. Finished results of a clean, heat applied photo. Note: Not all colors work well with photos, testing the colors are recommended.

# STAHL'S LASER CUT PROCESS

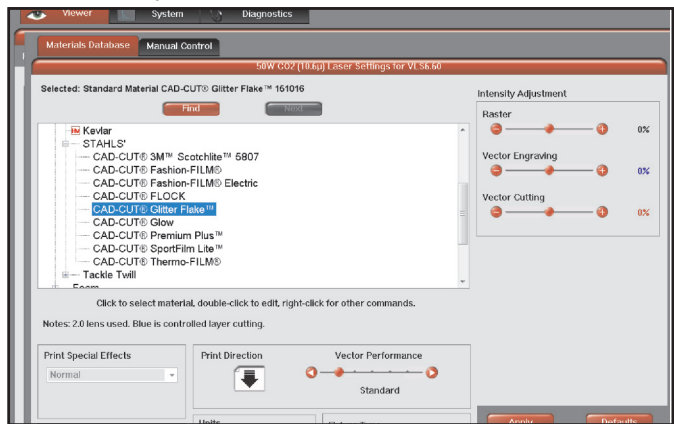
Process works with: Any "Laser Safe STAHL'S Heat Transfer Films, process will work on all colors of fabric.

# STAHL'S

## CAD CUT HEAT TRANSFER MATERIALS



1. Start with vector art or text, and convert image to blue outline. Then convert any parts that will need to be weeded to red. Next mirror the image and add a cut outline to the file.



2. Print file to ULS laser system, select Stahls' material from the ULS database. Then select "Fabric/Stahls." Next select desired material.



3. Place sheet on vacuum table shown on page 2. Cut the file with laser system and remove.  
*Note: All insides have been cut away as seen above.*



4. Peel the transfer material.

*Note: Because inside parts were cut through with the laser system, the part will peel complete in one single process, no weeding necessary.*



5. Heat apply then warm peel the carrier (backing).



6. Finished results on mini-T shirt.

# STAHL'S' MULTIPLE COLORS

Process works with: ANY STAHL'S' Heat Transfer Materials

## STAHL'S'

CAD CUT HEAT TRANSFER MATERIALS



1. Combining different laser processes and colors together are simple with a laser system. Use processes on pages 2-4 to setup file(s).

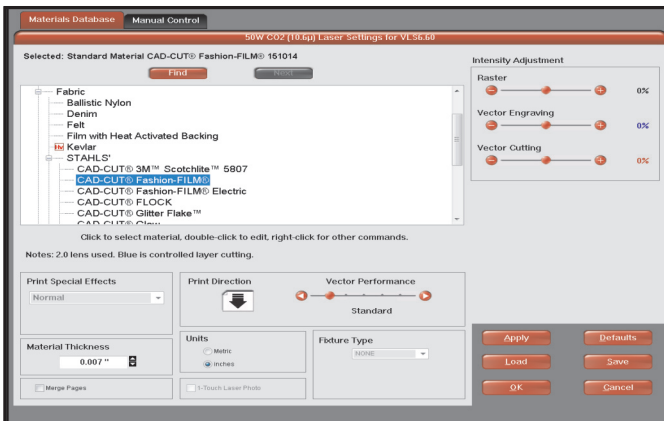
## STAHL'S'

CAD CUT HEAT TRANSFER MATERIALS



2. Design files so that there is a matching male and female notch with the red laser cut path.

*Note: This process can be used for as many colors as needed.*



3. Print file to ULS laser system, select Stahl's' Material from the ULS database. *Select: Fabric/Stahl's'/select desired material.*

*Note: Each color will need to be process separately using steps in previous pages.*



4. Place the laser cut notch in the carrier (backing) together then heat apply both colors at the same time.

*Note: This process can be designed for as many colors as needed.*

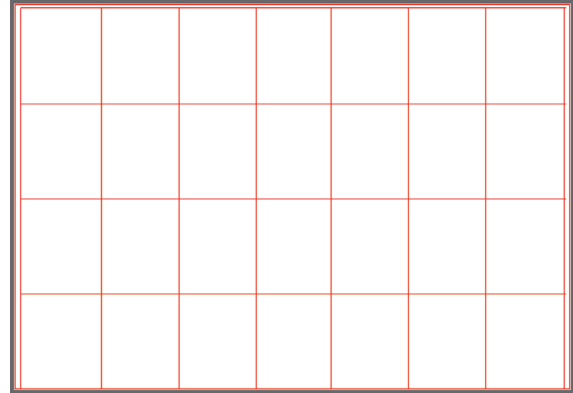


5. Heat apply both colors at the same time, then warm peel the carrier (backing).

*Note: This process will only work with materials that have a similar heat and time setting.*



6. Finished heat applied laser cut GlitterFlake™ and laser engraved Fashion-FILM®.



1. When laser marking large sheets, heat from the laser may cause the material sheet to shrink during the engraving process. This can cause the cut path to not line up with the marking or photo.

2. To solve this, precut an outline around each component with the laser as shown above using vacuum table shown on page 3. After this file is cut, engrave design file as a separate file.

## Reference links:

Link to Universal Laser Fashion film® demo video:

<https://www.youtube.com/watch?v=IFJH6Q71wXc>

Link to Making Apparel with your Laser Cutter:

<https://www.stahlstv.com/making-apparel-with-your-laser-cutter-101>

Link to Creating Stunning, Fine Detail with Laser Cutting:

<https://www.stahlstv.com/creating-stunning-fine-detail-with-laser-cutting>

Web location to buy mini-t-shirts:

[www.stahls.com/mini-t-shirts](http://www.stahls.com/mini-t-shirts)

Universal Laser Driver Download:

<https://www.ulsinc.com/support/software-downloads>

For more information contact Universal Laser Systems Inc technical support:

[support@ulsinc.com](mailto:support@ulsinc.com)

480-609-0297