3D Foiling Trick Within a Discharge Print

Foiling has regained popularity over the past few years as an accent in water base and discharge ink prints. Generally however the foiling is flat and falls short of the sparkle that foil can have when it is applied over a textured base.

Our friends at Forward Screenprinting in Oakland have produced a good video of their print technique using discharge and foiling. Copy the link below or double click on the video image to connect.

URL Link to Forward Printing's Discharge Video
http://www.youtube.com/watch?v=6-sIXKPUtFE&feature=feedu

The video shows how a discharge and foil print is set up on press as well as the foil application. this newsletter shows how to create a textured 3D foil using a similar set up.

Artwork:

The easiest way to create 3D foil is to substitute a black keyline or outline design element with a puff ink screen, flash it, then print a foil adhesive screen. However adding a textured puff base can increase the quality and ease of 3D foiling.
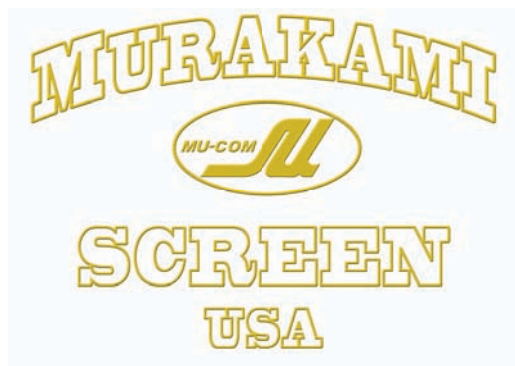
While the outline method works for line art below 1/8th of an inch line weight, larger areas like the Mucom oval's large 'M' (a symbol for the micron btw!) may be difficult to cover smoothly with foil. The answer is to texture the puff base plate with patterns found in Photoshop. The result will be a textured base plate followed by a separate screen with a solid overprint of foil adhesive. This texturing creates bumps and imparts a 'gold nugget' look to the foil process when the shirt is run through the oven after the foil is peeled. First we will explore patterns in Photoshop and how to create textures for the puff base plate. Then we'll show how to use it in the previous design and how we can combine discharge inks with this design process.
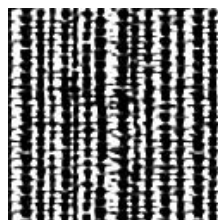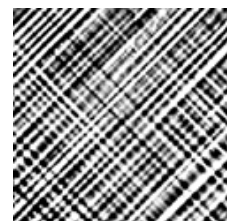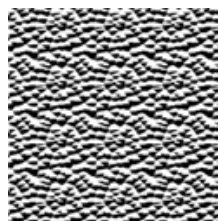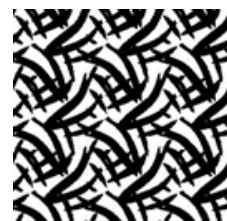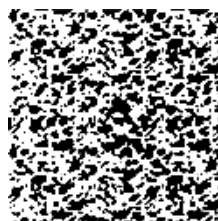
The textures above were all made in minutes using patterns found within Photosop. Some like the cross hatch and the leaves in the upper right corner were created by duplicating the layers, deleting the background to create transparency, then rotated to create the patterns you see.

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Textured Foil Technique Cont.

Notice all patterns have air surrrounding the texture print. This allows for fast flash times, as well as providing 'bumps' that cause the foil to have both a bright pin point reflection as well as dark shadows to create the sparkle effect. The size of the textures on the previous page are about right for a good puff foil effect, any closer together and the puff would be solid with no valleys, any larger and the texture would be too big to work for this application.
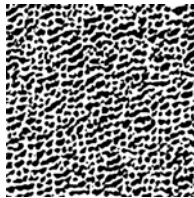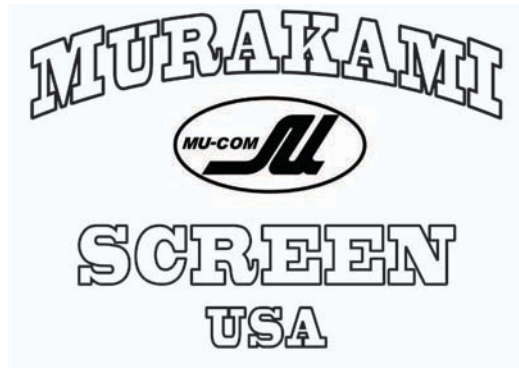
Texture size shown is perfect for the gold nugget look.

Print puff ink with this texture through a 110-S or an 80-T with minimal squeegee pressure.

Printing the foil adhesive

Let's look at how to apply a texture to a design. Here is the art as it looked for a one color print.

There are 3 different ways to foil this design.

1. To use just the outline and choke the puff base as shown in the letter N to the right.
2. Texture the outline as shown on page 6.
3. Texture the interior fill of the letters also shown on page 6.

First Way: Duplicate art onto a new layer and select outline of letters with magic wand. Then **SELECT>MODIFY>CONTRACT**. Enter 2 pixels to contact the outline so the puff ink won't be seen in the final print.

Save both selections, the original outline will become the foil adhesive, the layer we modified with a contract command will be the puff in, then save a selection of both layers. . A saved selection will be turned into a spot color channel and assigned a PMS spot color. More on how to do that in a moment. When these new spot color channels are output the modified 'choked' selection becomes the puff base and the original seletion the foil adhesive positive.

Saving the file in the *Photoshop DCS 2.0 (EPS)* file format allows the rip to recognize these 'discreet channels'. DCS stands for *discreet channel separations* and is why assiging PMS colors within the channel layers is important. Again see our previous newsletter at to understand how to *create spot color channels*.

Here is a closeup of the letter 'N' in the word screen, simulated for this newsletter.

If the outline in the letter were any wider it would be difficult to foil. The smooth texture of the outline requires perfect foil application.

When using the outline in a piece of art keep the line thickness below 3 points or about an 1/8th of an inch. 1/16th of an inch width is optimum. Foiled Outlines look better when the line work is somewhat irregular with a varying width. Pure geometric art like this N can be more difficult than a distressed outline that hides some of the imperfections in foil application.

Now lets look at texturing the outline to create an easier 3D foiling technique that is more forgiving and imparts a gold nugget like look.

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1. To create texture within any area of the design simply create a new layer within your original art then fill with any color.

2. Then Double click on the layer to bring up the **LAYER STYLE** dialogue.

3. Then click the check box for **PATTERN OVERLAY** and then the down arrow in the pattern selection menu and select a pattern for the puff base plate. Irregular patterns work best. There are many libraries you can load by clicking on the little arrow located on the right of the pattern square drop down menu. You can also scale the pattern so that the details will puff well. (See page 1 for pattern sizes that work with puff foil printing.) Click OK.
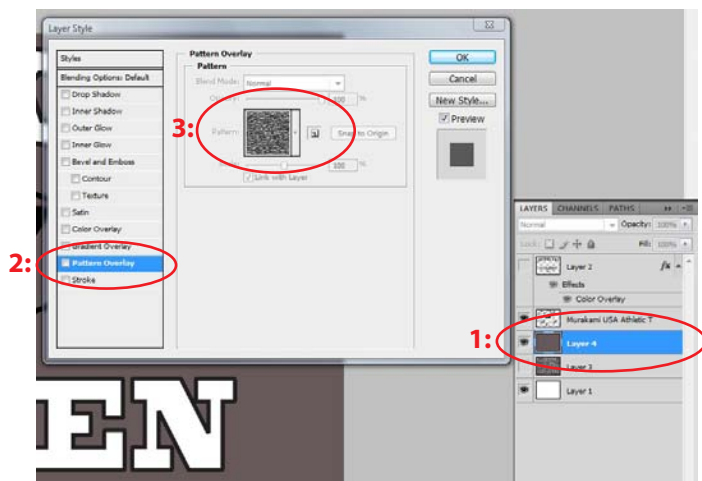

The result will be a layer that we can use to fill areas of the design with texture to create a puff base plate. There are a couple of more steps that will help this texture print better.

1. Convert layer to a smart object by right clicking on the layer and select **CONVERT TO SMART OBJECT**.

2. By converting the layer to a smart object you can now rasterize the layer: **LAYER>RASTERIZE>LAYER.** This will allow us to use image adjustments for the next step.

3. By rasterizing the smart object layer we can go to: I**MAGE>THRESHOLD** to change the image into a sharp black and white pattern that will print better than a the tonal greyscale found in the patterns menu.
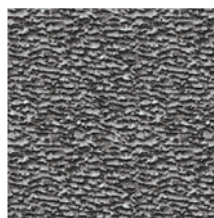
The original pattern had a lot of tonal values that need to be elimintated to create space between the elements that will print. The best tool for this is to go to:
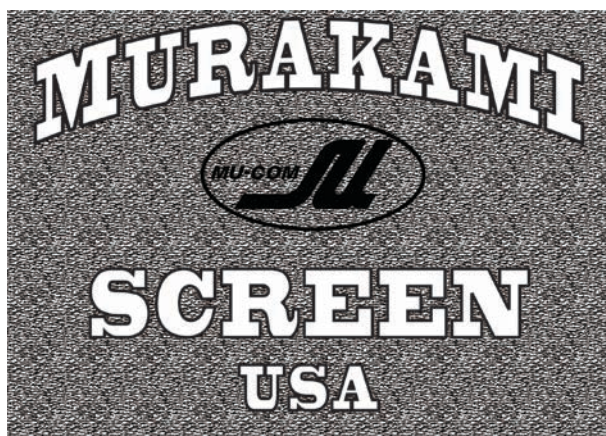
IMAGE>ADJUSTMENTS>THRESHOLD
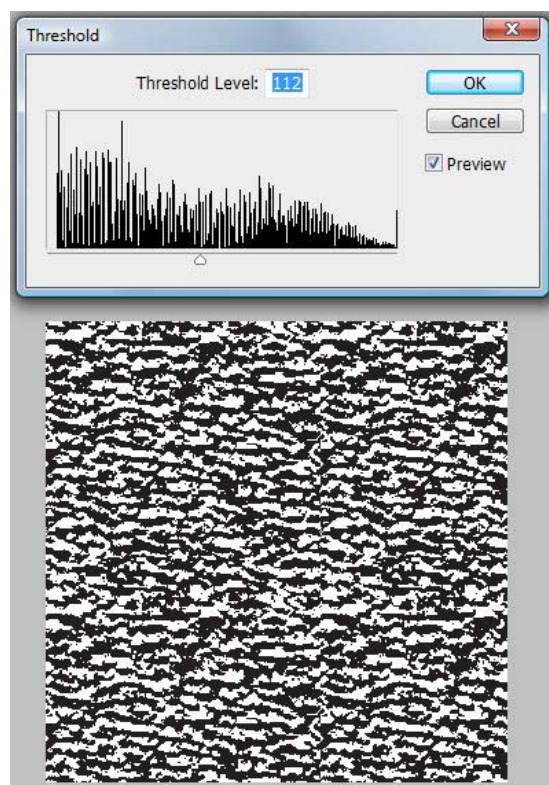
You can control the ratio of black to white by moving the slider left or right. This will now become the puff print base in the next steps.
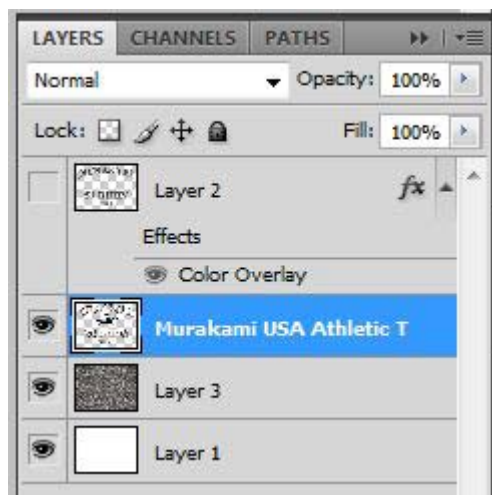
page 3

Here is the design we began with and the pattern layer we just created. Now we'll fill the center of Murakami Screen USA with the pattern layer to create the puff base plate art.


Select the layer with the original Murakami Screen USA Art and simply use the Magic wand to start building a selection.

Simply click the center of the M which will select all the white on this layer and create a selection of the inside of the letters. Save and name this selection.

With the selection of the interior of the letters still active duplicate the pattern layer by clicking on it and draging it down to the page icon at the bottom of the layers dialogue to create a duplicate layer of the pattern. Select this new pattern layer if it isn't already highlighted.

Now press **SHIFT/CTRL>I** (the i key) to invert the selection which will select everything *but* the inside of the letters. Then press the **DELETE** key to create a pattern inside the outline of the lettering.
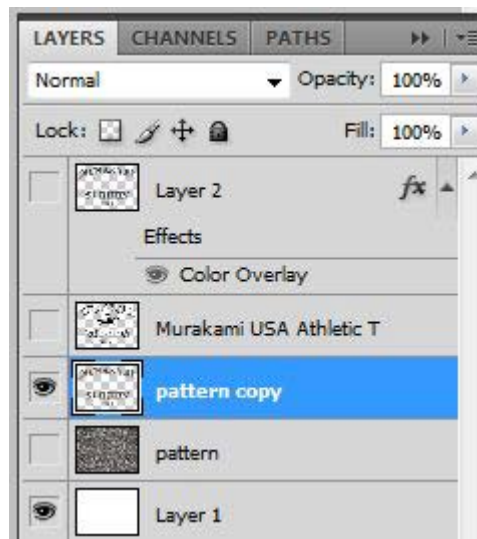
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**Textured Pattern Creation Cont.**

Click **CTRL>D** to deselect. With the the new patten layer of lettering highlighted go back to the magic wand and with the contiguous box turned off, click on a black area in the pattern. This will put a selection around the pattern's black elements.

Save this selection and name it to create a channel. Go to:
SELECT>SAVE SELECTION and give it a name you will recognize. Now click on the channels tab next to the layers tab to bring up the channels pallette.
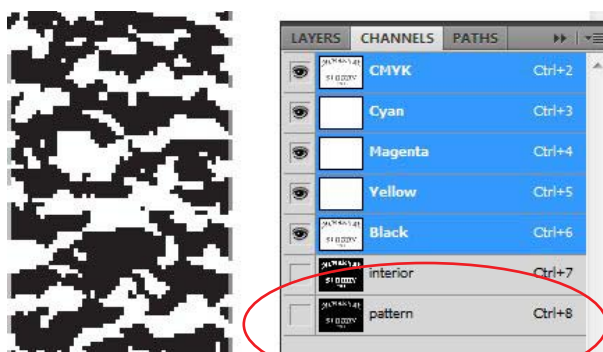
Now we can change this channel into a PMS spot color that the RIP program can recognize as a discreet channel to be output as film. First we need to invert this channel so it outputs correctly. Select the pattern channel and Click **CTRL>I** (the i key) to invert the image.
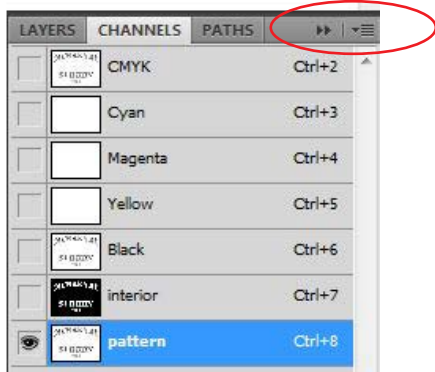
Now click the little down arrow at the upper right of the channel pallette and select: **NEW SPOT CHANNEL**
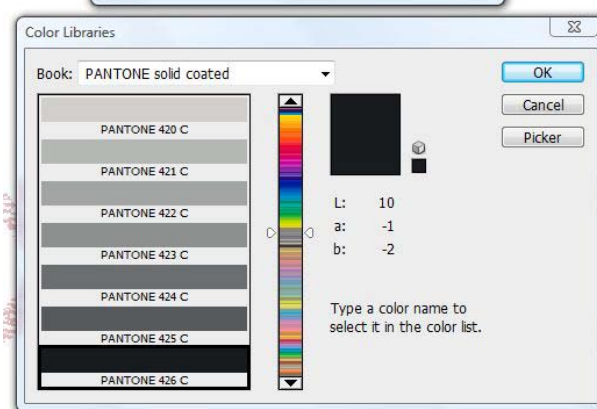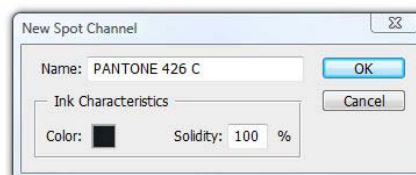
In the first dialogue above click the color square then select Pantone Solid Coated from the drop down menu in the next dialogue box and assign a PMS Color for this new Spot Channel. Click OK. This will be repeated for all screens you want to create for the design, whether they are discharge color, foil base, or foil adhesives. Always save completed selections for all discharge colors, all puff bases and foil adhesives. The process of saving a selection creates a channel that you can easily assign a PMS number to so your RIP program can recognize and output a positive for each channel. Always save the final file as a:
Photoshop DCS 2.0 (EPS) so your Rip can recognize the PMS Channels and print out a positive for each.

The Puff Base and Foil Adhesive positives differ in the following way. The Puff Base is a pattern, the foil adhesive prints solid over the pattern, offset below. Both the puff base and foil adhesive need their own spot color channel to create a positive for each.

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Separation Examples

The textured puff base plate can be used in a variety of ways as shown below. The main thing to remember is avoid texturing large solid areas, puff foil works best as an accent..

Using the Puff Foil Pattern on the lettering.

Using the Puff Foil Pattern Technique on the Outline.

Adding Discharge Inks to the Print

Any selection made can become a channel and converted to a spot color channel that can create a positive for discharge color. Simply follow the previous steps of:

1. Select art element(s)
2. Save Selection and name it to create a channel.
3. Convert channel to a Spot PMS Color Channel.
4. Save file as a Photoshop DCS 2.0 (EPS) format so your RIP can recognize the spot colors and print out your film separations.

Print Sequence:

Print Head	Color	Mesh
1	Gold Puff	Smartmesh 110S
2	Flash	Flash until dry, but ink should not puff. (Crucial)
3	Cool Down	
4	Medium Blue	Smartmesh 135-S or 150-S
5	Red	Smartmesh 135-S or 150-S
6	White	Smartmesh 135-S or 150-S
7	Flash	Optional, but flashing will preserve a bright white
8	Cool Down	
9		
10	Plastisol Foil Adhesive	Smartmesh 86-T or 110-S up to 150S for detail

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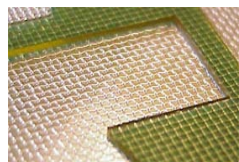**MURAKAMI SCREEN U.S.A., INC.** *745 Monterey Pass Rd. Monterey Park, CA 91754 Tel 323.980.0662*

Recommended Products for this technique:

Emulsion: Murakami Aquasol HVP, HV, or TS*

* Add 8 grams of diazo per gallon of emulsion for increased water resistancy to waterbase and discharge ink systems.

Mesh: Smartmesh thin threads, 110-S, 135-S, 150-S
For the puff base and discharge inks.

200 Micron Thick Film:
Murakami Thick Film prints a consistent layer of ink for optimum imaging of dimensional inks like puff, blister base, high density or gels.

Hardeners: MS Hardener from Murakami

MS Hardener increases durability but leaves the screen reclaimable.

Apply to both sides of screen and dry in sun or in hot box for stronger results.

Printing discharge or waterbase inks with puff foils was a key to my company's success. Once we mastered the process it opened doors for new sales. The technique is not difficult. The most important part is selecting a texture that works for the design. Scaling the pattern in Photoshop was a key to getting good prints on outlines or in fills as well as making sure the puff artwork had just the right spacing and open area to create valleys between the puff bumps.

Peel the foil and run the shirt through the oven to get the puff ink to re-puff that creates the gold nugget look. Experiment with puff ink brands, some work better than others to repuff the ink under the foil when run through the oven a second time.

Send us your results, we'd be glad to show off the results of this process in an upcoming newsletter.

To order or discuss your print needs contact Alan, Bob, or Walt at the numbers listed below.

Thanks for reading,

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800.562.3534

Bob Wellen
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Walt Wright
916-343-0018

www.murakamiscreen.com