



Technical Newsletter

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

Using Thin Thread Mesh Discharge Ink:

Discharge Prints are more vibrant and have greater details using the proper thin thread mesh. S-thread mesh allows the ink to pass with ease through a greater open area than is achievable with T thread mesh. Typically to get good discharge color the print must soak the shirt 50% of the way through the fabric so that during curing the surface fabric and underlying weave is completely discharged to a greige goods color. Generally the greige goods color is a tan color. Different colors of fabric have different discharge ratings, 5 being best and 1 being marginal. A black shirt is typically a "5" while a turquoise shirt made with dischargeable reactive dyes does not discharge as well and is rated at 1-2 on discharge effectiveness.



The examples shown here were printed at Motion Graphics in Sacramento California. Tom has a great article coming out in the June issue of Printwear magazine that deserves reading.

Look at the detail below in this discharge print. S thread allowed lots of discharge ink to pass through the mesh, in this case a 150 thread per inch with a 48 micron thread. In the past this would be classified as



an S thread. Today with the variety of thread sizes available we refer to it as a 150/48. When S Thread is combined with Aquasol HV or HVP the screen has the best combination for printing discharge. S-thread helps the ink print well, and Aquasol HV or HVP can stand up to the longest print runs you can produce.

However there are many different fabric weights and weaves that require specific mesh counts to achieve brilliant detailed discharge. Typically shirts have different fabric weights from very light 4.3 oz up to 6.1 oz 'Beefy T' weights as well as different thicknesses of yarn and singles count. The chart below are fabric weights and the highest mesh count suggestion that can be used. Press set up can have many more adjustments to yield a good print. Squeegee angle, durometer and speed also play an important part of a good print. S thread can eliminate some of these adjustments so that press settings of the squeegees do not need minimal modification.

Shirt Fabric Weight	4.3	4.8	5.6	6.1	2x1 Rib
Suggested S Mesh Size	225/40	150/48	110/71	110/71	80/71
	225-S	150-S	110-S	110-S	80-S

To obtain the detail of the example shown you need S-Thread. The increased open area allows the ink to soak the shirt while the higher mesh counts improves the detail the screen is capable of printing. The mesh statistics in the chart below shows why. 150-48 has an open area of 51% but has 40 more threads per inch than a 110-T mesh which only has a 43% open area. So more threads and more open area all create a sharper discharge print with excellent color.

150-S and 110-T Comparison	110-T	150-S
Thread Thickness in Microns	80	48
Mesh Thickness in Microns	134	77
Mesh Opening Size in Microns	151	121
Percentage of Open Area	48%	51%

Plastisol Ink:

S thread is the best improvement you can make for your base plates. A 150-S can print brighter and more detailed base plates than a 110-T typically used on most plastisol base plate printing. Just like discharge, base plates made with 150/48 can hold more detail, and in the case of plastisol, use much less squeegee pressure resulting in a softer hand print since the ink is laid on the surface of the shirt and not driven into the fabric. As a bonus 150/48 uses less ink than a 110T.



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The examples below show the results obtainable with S thread mesh using plastisol inks. Printing on base plates is also easier with S-thread mesh. The color plates are typically in the 225 to 350 range depending on halftone counts, area needed to be covered with ink and the ink color viscosity. The key is less squeegee pressure. Less pressure is needed to transfer the ink to the print which preserves details in the design from being smeared with too much squeegee pressure. The negative space of tonal areas in the 60-80% range are better preserved.



*Shirt Courtesy of Ink Throwers
Tijuana, Baja California
© Ink Throwers*

A print like the one above and the tattoo woman on the opposite page with almost a solid base plate are much more commercially viable with a soft hand feel. Too often we modify inks, soften them, thin them out add soft hand extenders when all that is needed is a better mesh like 150/48.

(A special thanks to Motion Textile and to Ink Throwers for sharing their outstanding art work and printing for this article.)



*Shirt Courtesy of Motion Textiles
Sacramento, California
© Motion Textiles*

In many cases, as seen in the photo below, a base plate may not be necessary since the ink sits on the surface of the shirt and not beneath it. The lack of a base plate significantly improves the urban grunge texture look prevalent in many designs being created for today's market's. Eliminating base plates saves on ink, increases production yields due to faster flashing of thinner or smaller print areas in designs like this.



*Shirt Courtesy of Motion Textiles
Sacramento, California
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S - Thread Mesh

Discover the secret to better screen printing!

Softer Plastisol Prints

- Brighter base plates.
- Less ink usage.
- Softer Hand.
- Less dot gain.

More Detailed Discharge

- 150-S allows more detail than a 110T and achieves better color.
- Use a 225-S for 45-50 line halftones.
- Screens stay open longer, less dry in.

Better Waterbase Prints

- More details with better ink saturation of the fabric.
- Use Aquasol HV or HVP emulsion for strong stencils.

New!

Murakami Pre-stretched Screens



- Strong frames capable of high tension.
- Stretched with Smartmesh; retains tension better than any brand.
- Precision stretched screens with optimum tension levels.
- Available in all mesh sizes.
- 20" x 24" Hand printing
- 23" x 31" M&R Standard Format
- 25" x 36" M&R Large Format



Smartmesh
Nittoku

Murakami Screen USA | 745 Monterey Pass Rd. Monterey Park, CA.
www.murakamiscreen.com | 323.980.0662 • 800.562.3534

Murakami Screen USA now offers pre-stretched frames in S-Thread as well as conventional threads and in bolts. Call today to reserve your order of the best screen mesh. Seeing is believing!