MURAKAMI SCREEN USA

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

Print Performance vs. Material Costs

Too often in life we purchase items based solely on cost alone. Following this logic then everything we purchase should be the cheapest it possibly can be. The thought process goes, 'spend less, make more.' Yet I will bet you didn't buy the cheapest car on the lot, you know the 1000 dollar subcompact with 300,000 miles on it? Why? Simply because you know you want a car that will last, get up to freeway speeds safely, get decent gas mileage, and haul you and your family comfortably to this weekend's soccer game. More than likely you bought a product to fit your needs and not the cheapest car on the market.

Companies that operate on the philosophy that 'cheaper is better' fall into the above trap. The trouble is too often the company is on the ropes after a couple years of buying emulsion or mesh that doesn't perform. Their print quality not as good, registration is fuzzy or barely there, and their prints lack the color and quality that their competition is providing. In screen printing it's performance that counts. Here is a short list of why quality stencil products matter in Screen Printing:

1. Production Yields: Downtime is the 800 pound Gorilla in your shop, and he gets paid before you do! You can rush orders all you want or jump up and down on the folding table admonishing your workforce to get the job done. These tactics simply won't matter if your press is stopping to fix pin-holes, or you need to set up another discharge screen that has broken down.

My company found out like many others in this industry that production is much like the tortoise and the hare story. Consistent steady production with quality stencil products will often finish sooner than a mad rush with cheaper stencil products that breakdown or lose register.

2. Quality: Believe it or not, you have competition, lots of it. There are printers bidding on your work as we speak. Whether you are a volume printer, or are a niche market printer, your work will be analysed and critiqued by your competition to see if they can do better. Buyers are always looking for a better price, but they also weigh the quality factor, especially if they are going to wear it. Quality is difficult to come by if the products you use to print with cannot produce the highest quality prints possible. A distinct competititive advantage is knowing you can print something your competition can't match.

3. Labor Costs; *'You can pay me now or you can pay me later, but you will pay'.* This business idiom is golden. The initial cost of a cheap stencil product is often lost when looking at the additional labor necessary to keep your print lines going.

Your Screen Room Blind Spot: - Your emulsion should create perfect stencils with excellent details without needing to be ***underexposed***. This is a huge difference we see that printers ignore. If you don't expose it properly, it will breakdown (think: excess labor, press downtime, twice the emulsion to complete the job. Excess labor and material costs show up at the end of the year in a low profit margin, or worse when the owner needs a paycheck and nothing is left. So while a small savings may have been realized when inexpensive emulsion was purchased, you will pay much more to complete the job.

Image vs. Exposure: Many screen makers are content to get an image on the screen. As long as it has all the art details any breakdown issues are the fault of a poor performing emulsion. WRONG! Kind of like saying you can cook a cake halfway and if it isn't edible it's the cake mix's fault. No the chef, or in our case the screen maker needs to bake the emulsion with light long enough to get a good exposure that yields a strong performing stencil. If the art doesn't image well on proper exposure times it is due to an emulsion that can't resolve details with full exposure. Murakami emulsions are designed to be fully exposed and hold details. Underexposing it again is the 800 pound gorilla eating up your profits with downtime from an underexposed screen that will breakdown and bring the main profit center to a grinding halt.

Your Money Maker

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4. On time Delivery: Nothing loses business faster than being late on delivery. Try showing up with an order the day after a team has it's opening game, or try not having an order finished for a 5-10k run fundraiser. We've all been there. I remember loading an old Mitsubishi pick up with 50 cases of shirts at 4 in the morning after printing all night. The customer had arrived the previous day for his shirts, but they weren't ready, we needed to shoot another set to complete the long run. He was furious, I promised to deliver. Early in the next morning I drove 150 miles to deliver in Ventura, then another 80 miles to Griffith Park in LA to get there just before the races. At each location I realized how bad we had made our customer look to the people who had paid entry fees only to have a mad rush before the race to hand out the commerative shirts.

"But the screens broke down" I explained, "we needed to shoot new ones" were excuses that cost me this fine customer who gave us 2000-5000 piece runs on white every week or two. His looks said it all, I never heard from him again, and vowed this would never happen again. We began analyzing the reasons and found that this incident as well as losses with discharge printing all led to one thing, our emulsion was letting us down. We happened upon Aquasol TS from Murakami. To this day I credit that emulsion with giving us credibility and turning our shop around. We began producing discharge prints better than most, we applied foils, we landed major customers who liked our product but had never ordered.

Sometimes saving pennies can cost you dollars. The old adage; "Pennywise but dollar foolish" can determine your success. Too often we become accountants and try to massage expenses to wring out profits. Highly successful companies in the screen printing industry know their income comes from printing well and delivering on time results. Why risk losing a client when you can gain more, print better, faster, and more consistently with a product that performs?

Billable Charges per Hour							
Print Cost	200	250	300	400	500	600	700
$ 0.25	$ 50.00	$ 62.50	$ 75.00	$ 100.00	$ 125.00	$ 150.00	$ 175.00
$ 0.30	$ 60.00	$ 75.00	$ 90.00	$ 120.00	$ 150.00	$ 180.00	$ 210.00
$ 0.35	$ 70.00	$ 87.50	$ 105.00	$ 140.00	$ 175.00	$ 210.00	$ 245.00
$ 0.40	$ 80.00	$ 100.00	$ 120.00	$ 160.00	$ 200.00	$ 240.00	$ 280.00
$ 0.45	$ 90.00	$ 112.50	$ 135.00	$ 180.00	$ 225.00	$ 270.00	$ 315.00
$ 0.50	$ 100.00	$ 125.00	$ 150.00	$ 200.00	$ 250.00	$ 300.00	$ 350.00
$ 0.55	$ 110.00	$ 137.50	$ 165.00	$ 220.00	$ 275.00	$ 330.00	$ 385.00
$ 0.60	$ 120.00	$ 150.00	$ 180.00	$ 240.00	$ 300.00	$ 360.00	$ 420.00
$ 0.65	$ 130.00	$ 162.50	$ 195.00	$ 260.00	$ 325.00	$ 390.00	$ 455.00
$ 0.70	$ 140.00	$ 175.00	$ 210.00	$ 280.00	$ 350.00	$ 420.00	$ 490.00
$ 0.75	$ 150.00	$ 187.50	$ 225.00	$ 300.00	$ 375.00	$ 450.00	$ 525.00
$ 0.80	$ 160.00	$ 200.00	$ 240.00	$ 320.00	$ 400.00	$ 480.00	$ 560.00
$ 0.85	$ 170.00	$ 212.50	$ 255.00	$ 340.00	$ 425.00	$ 510.00	$ 595.00

The chart above shows how the quality of your emulsion and mesh affects your billable charges per hour. If you stop four times in an hour for emulsion repairs or registration fixes due to a poor quality mesh and each stop takes five minutes your production will drop from 600 pieces per hour to 400 pieces per hour. Too often production accepts these stops as part of business. But if I told you you could pay ***less than a penny*** to solve these press stops would you?

In today's economy everyone wants it cheaper, my reply is OK, but who wants to make money? Investing a little in better products amounts to very little over the life of the print run or life of a screen. Avoid press downtime and you can make a lot more than what you save on a cheap product. On the next page I have amortized screen costs and emulsion costs over their production life.

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Cost of Screen	Total prints over screen life			
	10,000	20,000	50,000	100,000
15	0.0015	0.0008	0.0003	0.0002
20	0.0020	0.0010	0.0004	0.0002
25	0.0025	0.0013	0.0005	0.0003
30	0.0030	0.0015	0.0006	0.0003
35	0.0035	0.0018	0.0007	0.0004
40	0.0040	0.0020	0.0008	0.0004

Cost per Print

The highest cost per print above was less than half a cent over the life of the screen at 10,000 units, which is low for the life of a brand new frame and mesh. For restretched frames it is a tenth of a penny. Screen life does vary by shop. In our travels we see screens lasting far longer in shops that train screen room personnel on handling and process techniques. Too often screen room personnel are given a short training session on how to reclaim a screen, degrease it, coat it, etc. But rarely are they shown how to stack them, how to avoid letting corners of one frame scrape across finer meshes causing the screen to pop later.

The following are some handling tips to pro-long the life of the screen and to lower per unit costs. As the chart above shows, maintaining screens with the best print and production quality is not a huge cost difference, but is a huge profit difference when it comes to production yields and the competitive edge better mesh and emulsion provide.

Handling Tips:

1. Reclaiming Screens: It is better to reclaim fine screen meshes one at a time in the wash out sink or in the dip tank. Placing many fine mesh screens in a sink and leaning them against each other or flipping them around during reclaiming or degreasing puts sharp frame corners in contact with the mesh. While the mesh may survive the initial contact, it often creates minor damage that will eventually pop finer meshes like S thread mesh, or counts above 200 mesh.

2. Dip Tanks: Be careful when adding or removing fine meshes from a dip tank. Frames have a long life and can get banged around in the shop. Burrs and knicks can form on the corners that can scrape across the mesh when placing them or pulling them from the dip tanks. The screen may not pop until it is drying, or when first used in production.

Avoid scraping the frame corners against the mesh when placing and removing from a dip tank.

3. Moving Screens: Rolling racks can move 20 or more screens at once and minimize handling. Make sure the rail the screen rests on is smooth and will not nick the mesh. Sometimes it is necessary to cover the rail edges to prevent mesh from being damaged, especially on Newman Roller Frames where the mesh can rest on the rail.

4. Stacking Screens: Respect your mesh and it will last longer. Too often we see screens leaning against the wall with new ones added to the stack and allowed to rest against the mesh of a neighboring screen. As mentioned, stretch and glue aluminum or especially powder coated blue frames can have sharp corners that get worn and have metal burrs. Mesh can pop immediately or downline during screen prep and coat, or on press in production.

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5. Press Set-Up: Screen operators have a habit of setting floodbars, squeegees, clips and tools onto the screen during set up. Minor burrs and a sharp edges can damage threads that later cause the mesh to pop.

6. Press Breakdown - Another often overlooked area that can damage mesh is removing ink from the screen. Commercial dry wall spatulas, putty knives, and even plastic scoops can often be too sharp for fine meshes. Rounding off sharp corners and sanding to a dull edge helps prevent the mesh from being damaged during ink removal.

7. Degreasing: Inexpensive mesh can be quite smooth and need abrading for the emulsion to adhere. Smart-mesh from Murakami does not need to be abraded for proper emulsion adhesion. Use DGR-801 to clean the mesh of oils using a soft sponge on finer meshes. Choose a sponge that will not fall apart from long term use.

Pads like the one pictured below *should be avoided* for screen reclaiming and degreasing. The material in these pads acts like coarse sandpaper and damages fine meshes. Instead use the proper chemistry and soft brushes to reclaim emulsions from the mesh. ER-605 and HR-701 can be used in a dip tank to soften hardened water base screens or plastisol screens.

Screen handling, reclaiming, and degreasing of fine meshes requires care in all aspects of handling. Personnel tend to be cycled through screen rooms and yet blame the mesh when it pops, not mis-handling, or use of tools that should never touch the mesh.

With proper care and handling, screens can last for tens of thousands of prints. Fine mesh screens are not bullet proof. Rather they are fine threads stretched to very high tension that can only be preserved with proper employee training and tool selection.

Questions? Give us a call to discuss your screen room needs.

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