MURAKAMI

October 2009

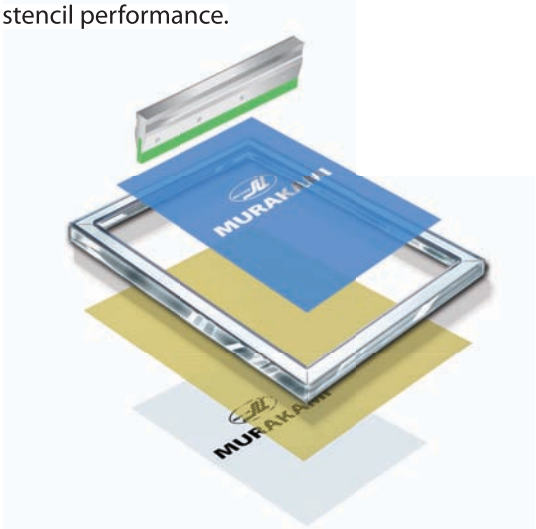
Technical Newsletter

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

Screen Room Design
How it affects exposure quality

In last month's newsletter we discussed exposure lamps and their affect on emulsion exposure. The screen room also plays an important role in exposure quality and how it performs on press.
In most shops the screen room is given little thought other than to make it somewhat light safe to avoid exposed screens. But what about Humidity? Air Flow? Reclaiming Procedures? Sinks? Heating? Racks? Pressure Washers? All of these processes affect productivity which in turn drives profits.

We go out on technical sales calls to solve exposure issues as part of our effort to sell and provide support for our emulsions. What we encounter: The screen room was designed as an after thought to the overall layout of the production area. A good exposure unit goes a long way in achieving the 'perfect screen' (see 'Exposure Lamp Comparison' under Support at www.murakamiscreen.com), but a poorly laid out screen room area can negate all the qualities of a good lamp. The ultimate goal is non-stop press production, few pinholes, no breakdown on press, all of which generate better profits. A well planned screen room prevents poor exposure, standardizes the environment of the room, and leads to predictable stencil performance.



The Perfect Screen

Labor Steps in the Screen Cycle:

1. Screen Cleaning - Non Screen Room Job: Keep plastisol ink out of your screen room, it contaminants mesh, sinks, and work areas. Keep solvent wash tanks nearby but not in reclaim area. If you use water based cleaners to remove plastisol this MUST be in a separate sink from your reclaim and developing sink. Encourage your press personnel, break down crew, and screen washers to keep the frames free of plastisol. Once you allow plastisol into the reclaim, degrease, coat, and store areas your screens will always have pinhole and fish eye problems that will decrease production yields.

2. Screen Reclaiming - Dip Tanks: Dip Tanks help keep this a non-stop process in busy shops. 4-5 screens in a dip tank allows the emulsion remover time to work so that in the reclaim sink emulsion washes off instantly. Put a new screen in every time one is taken out to keep production flowing. Use a dedicated Reclaim Sink where possible. Reclaiming and Degreasing in the same sink leads to pinhole issues. If you have only one sink you MUST rinse it down thoroughly before starting to degrease. During the degreasing process splash back will occur causing the reclaim solution to bounce back onto your screen which will lead to pinholes or fish eyes later.

3. Degreasing - Degreasing should be done in a dedicated sink. No reclaiming, no washing out water base ink, keep it as pristine as you can and your screens will be as pinhole free as the emulsion allows. You can develop screens in the degreasing sink, just avoid reclaiming. Thoroughly rinse all frame edges with a heavy stream of water inside and out to remove any degrease trapped along the mesh/frame corners to prevent fish eyes and streaks from forming in your emulsion coat.

MURAKAMI

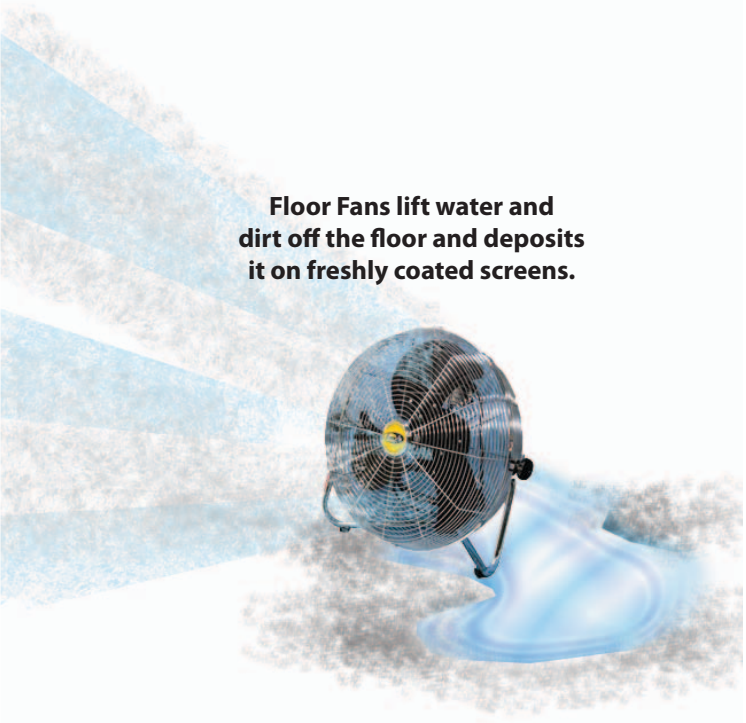
October 2009

Technical Newsletter

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

4. Coating Screens: Once reclaimed screens have dried completely they are ready to coat. Coating screens before they are dry will lead to fish eyes and pinholes. The screen coating floor area should be swept and mopped regularly, any dust will become a pinhole eventually. Beware that coating several racks of screens will increase humidity in the screen room. This humidity will be soaked up by dry coated screens increasing moisture levels and hindering complete cross linking during the exposure process.

5. Drying Coated Screens: A hot box is ideal to dry screens quickly and completely without affecting humidity levels in the screen room. If you don't have a hot box try coating at the end of the last shift and allow the screens to dry overnight. Leave the de-humidifier on to keep humidity levels down. Avoid drying screens with a floor fan. It will pick up dust and deposit it on your freshly coated screens, instead use a fan with a stand to keep it 3 feet or more above the floor.



Floor Fans lift water and dirt off the floor and deposits it on freshly coated screens.

Screen Room Equipment List

1. Exposure Unit: A strong multi-spectral lamp with an integrator. We recommend any exposure unit by Amergraph, Any Nu Arc with a 5" metal halide lamp and 5kw output, any Douthitt exposure unit, Any Olec exposure unit. Be aware that there are metal halide systems with small 3" bulbs. While they work ok for plastisol they age quickly and tend to produce weaker waterbase and discharge screens.

2. Dehumidifier: Home Improvement Stores, Sears, and others all sell inexpensive ($300 +/-) dehumidifiers. If your shop is in a rainy area, along foggy beaches, in a cold climate or you have a lot of wet screens in your screen room you need one. Set it to 35%. Run day and night if possible. If you turn it off at night humidity levels in the room may sky rocket on a rainy night and take hours to return to a 35% condition.

3. Screen Racks: They allow easy handling of screens. Once the screen is degreased and placed on a rack nothing will touch the mesh until it is coated. You can wheel them where you need them. From the reclaim area, to the hot box, to coating, to dry storage which is much more labor efficient than moving them two or four at a time by hand. They hold 12-20 screens. You can also move the rolling racks out to clean the floor, which was impossible in the wood rack system I built for my shop. Without rolling racks your screen room floor gets covered in dust since it can be difficult to sweep and mop everywhere. With movable racks you can sweep and mop the screen room floor to prevent dust and dirt from becoming pinholes.

MURAKAMI

October 2009

Technical Newsletter

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

Screen Room Equipment List Continued

4. Safety Lights: Yellow fluorescent safety lamps as well as yellow sleeves for traditional white fluorescent bulbs protect your coated screens while affording good visibility in the screen room. To check the light safeness of your lamps place some coins on the print side of an enexposed screen and leave overnight with the lights on. Develop the screen. If the coin areas fall out before the surrounding area you are lightly exposing your screens. After a week in this environment it may be difficult to wash out image areas.

5. Hot Box: If you plan on using rolling racks build a closet in the corner of the room with a sliding door, or hinged door so you can install an electric heater in the bottom. Base board electric heaters or ceramic forced air heaters are fire safe and can heat a small closet to 85 degrees. There are commercially available heaters that are completely self contained units that dry screens exceptionally quick. If you print a lot of water base and discharge or are in a cold climate with minimal sunlight, a hot box will help prepare stronger screens.

6. Washout booth - Dedicate one booth for reclaiming emulsion and washing waterbase screens. The other should be dedicated just for de-greasing and screen development. Use fluorescent bulbs to backlight the screen so you can see the image during development. Where possible separate the reclaiming and degreasing jobs into separate sinks for fewer pin holes on blockout and during production.

7. Lay Up Board: There are various line up grids from major auto press manufacurers for positioning film positives to be taped to the screen. If your press is capable of pin registration I recommend migrating away from manual line up and begin pinning your film and screens to speed up set up on press. A future newsletter on 'Pre-press Tools' will report on the various pinning systems available.

8. Vapor Barrier Door: This is a multi panel plastic 'door' that prevents outside air from entering the screen room. I have found these preferable due to the heavy flow of traffic in and out of the door which allows visibility, easy pass through, and most of all they prevent high humidity levels during the reclaiming process from entering the screen room

9. Pressure Washers: Depending on shop volume you may want a 3000 psi for reclaiming and a small 600 psi for developing. The smaller 600 psi versions sold at home improvement stores are ideal for developing exposed screens. SBQ emulsion benefits from being developed with a small pressure washer to develop details. Stronger pressure washers (3000psi) speeds up the reclaiming and dehazing process.

3000 psi

600 PSI

10. Brushes: Assign a dedicated degreasing brush and replace with a new one every month. The retired degreasing brush can be moved over to the reclaim booth, and the reclaim brush can be given to the solvent ink washer. Any grease or contaminants on the degreasing brush will create pinholes in the final screen. Another method is to buy colored brushes and color code them, red for solvents, yellow for reclaim, and white or green for degreasing.

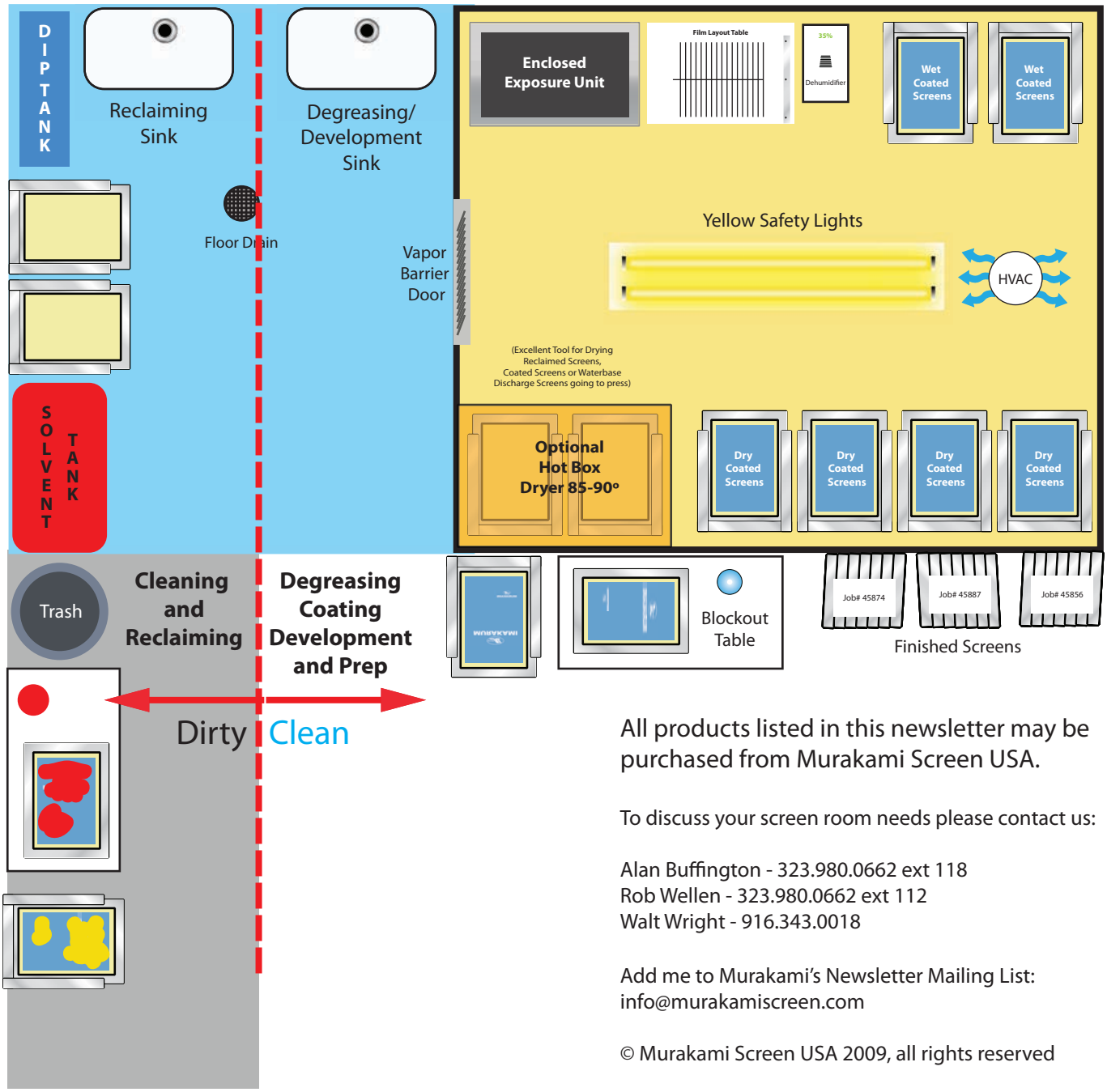
MURAKAMI

October 2009

Technical Newsletter

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

Screen Room Layout for MId Sized Automatic Press Shop.



All products listed in this newsletter may be purchased from Murakami Screen USA.

To discuss your screen room needs please contact us:

Alan Buffington - 323.980.0662 ext 118
Rob Wellen - 323.980.0662 ext 112
Walt Wright - 916.343.0018

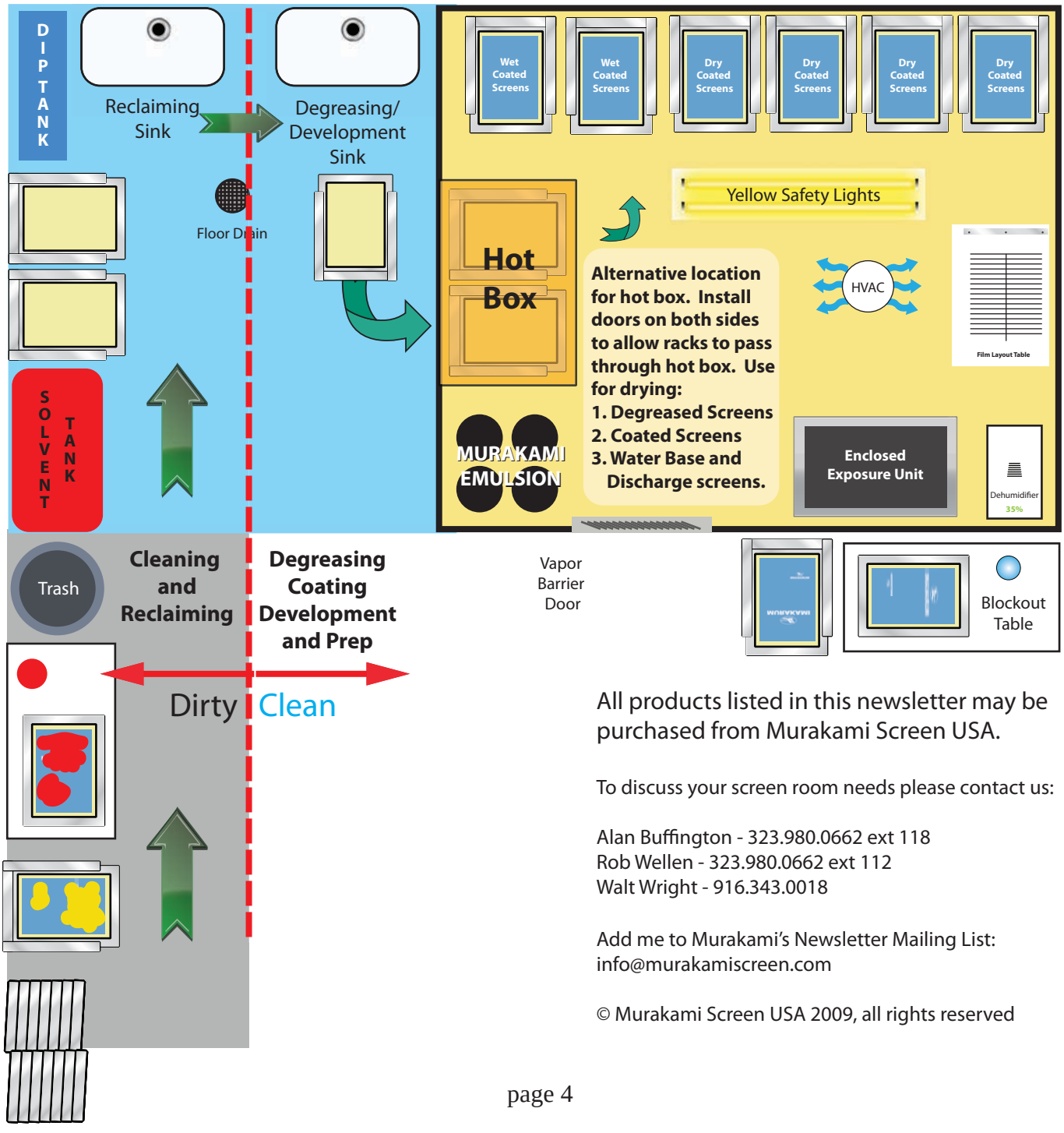
Add me to Murakami's Newsletter Mailing List:
info@murakamiscreen.com

MURAKAMI

Technical Newsletter

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

Alternative Screen Room Layout for Mid Sized Automatic Press Shop.



All products listed in this newsletter may be purchased from Murakami Screen USA.

To discuss your screen room needs please contact us:

Alan Buffington - 323.980.0662 ext 118
Rob Wellen - 323.980.0662 ext 112
Walt Wright - 916.343.0018

Add me to Murakami's Newsletter Mailing List:
info@murakamiscreen.com