Chapter 4

Setting Up a Job & Printing;

Job Prep (part 2) Print order, Registration, Strike-offs, Squeegee selection, Printing techniques and Production estimations.

JOB PREPERATION (Pre-Press Part 2)

Prepress (or make-ready) is the name given to the point in the screen printing process (and other printing processes) where the art and screen are given a final check, the stock or substrate is prepared and arranged for printing, the ink has been mixed and thinned, and the drying system and items needed during the print run are assembled close at hand and ready to use. It is important to carry out these prepress activities *before the ink hits the screen*, otherwise delays in printing will result, often stopping the print process or requiring cleaning of the screen.

ART & SCREEN CHECK

Using the film as a guide, a final inspection of the stencil should be made. Pay special attention to pinholes, or lines caused by film edges on the stencil, or any other imperfections in the stencil or image. These should be touched up before the screen is put in the press.

Block out and Touch-up

Touch-up or block-out is applied to the underside of the screen using a brush for spots, or a small flat spreader (old squeegee or sign vinyl applicators work great and clean easily) for larger areas. If touched up on the top-side of a screen, you risk wearing nicks or gouges in the squeegee rubber.

Commercial block outs are available from most suppliers and are designed for solvent based inks using water soluble stencil systems. When using water base inks, direct emulsion can be used as block out, but it must be dried and re-exposed to harden it for printing. A lacquer block out works well for water base, and does not require curing, but does require more aggressive removal during the reclaiming process.

Ensure that the screen is in good shape, with no serious rips or holes that will let loose during the print run. If there is any doubt that a stencil is suspect, or the image is flawed, re-shoot the screen. It saves time, money, and frustration if the problem is fixed at this point of the process.

Taping off screen gutters along the sides of the frame, or around images, can be carried out at this time, or if it's easier, tape the screen once it is in the press. Use thin packing tape, never paper or masking tape. A good tape job makes production printing easier because it controls where the ink goes, and makes clean-up a snap.

On long production runs, especially with water base, or when you know a stock edge is going to wear on the screen, a line of tape on the underside can protect the stencil from wearing thin from squeegee pressure along an edge. Make sure the tape goes on flat with no creases or folds.

SHIRT / STOCK PREP

Whatever the stock or substrate is, it needs to be prepared for printing. This includes unpacking shirts, verifying counts and sizes, cutting down in size from master sheet to press sheet size, or may mean removing wrapping or packaging, or cleaning dust or other residue from surfaces. The stock should be prearranged or stacked on a convenient table close to the press. Whatever the stock, keep it clean!!! The idea with getting the stock ready before you start printing is to avoid dealing with unpacking, packaging, cutting, or unnecessary delays once you have inked the screen and started your print run.

REGISTRATION

There are a number of methods of registration (lining up the screen image with the stock) and many are dependant on the type of press system. Simple hand presses do not allow for adjustment of the screen or printing table, so the stock must be moved to achieve precise register (left to right, up and down). On more sophisticated press systems, the screen master frame can be unlocked, this method require the image on the screen to be within a working adjustable area. This is called 'pre-registration' and is done when the film positive is exposed on the screen.

Placing the Positive

By taping the positive in place on the pre-registration board OR pallet, you now have a visual reference for register by looking through the screen and lining up the stencil with the positive. Keep adjusting until you have both lined up, and then carefully tighten your screen locks. Remember, after your stencil and positive are lined up you may encounter some deflection when you start printing, due to screen stretch or play in the press. Always check register once the printing has started and make your final adjustments at that time, then lock everything down for the print run.

Pin Register

The practice of pre-sticking punched tabs on to material, and then locating each piece on two pins stuck to the table top during the print run, has to be one of the most convoluted and time consuming methods of register ever invented. Pin register is used in film making and stripping to register overlays to each other. When used in this context it is accurate and accepted industry wide. Someone saw this done once and borrowed the idea for screen printing, and now it seems generations of college and university printmaking students have been taught a method that is not very efficient and causes major problems for the printer before, during, and after the printing. All other graphic processes use 3 point x y axis location, where the material itself comes in contact with the register tab or stop. Why? Because 3 point is quick, accurate, and easy to use.

INK PREP

Ink for printing should be mixed and thinned to a workable viscosity. Additional thinners should be close at hand for adjustment once printing is started. Always insure that you start with more ink than you need, especially when printing a custom color. The ink needs to be placed within reach of the press, but in a spot that it won't be accidentally knocked over.

ITEMS REQUIRED DURING THE PRINT RUN

It's a good idea to ensure that the following items are ready and close at hand before inking the screen and starting the press run.

Tools

Clear tape, spray tack, screen opener, a knife, rags, thinners, sponges and water for water base), a pen or pencil, print-off paper, a loupe, T-square and a small ruler are all items that need to be at hand during the run. Depending on the press set-up or material being printed, other specific tools may be required to adjust the press.

Tool Cart

A small wheeled table with a drawer makes an excellent addition to any print area. The tools can be stored in the drawer, and stock and/or ink can be placed on top. It can be easily moved into position during the print run, or moved to facilitate cleaning or adjustments on the press. In our production shop, each printer had his or her own table, and they were responsible for keeping their supplies and tools in order and ready for use.

Artwork, Sample Print, Work Order Artwork, Sample Print, Work Order

Keep these handy for reference at the start and during the run. It's important to check the first prints for positioning, print detail, and color before proceeding with the entire print run.

Mental Check List

Once all the items involved in prepress and make-ready have been taken care of, it's time to set up the job on the press. In some situations, press set-up can coincide with stock prep and ink mixing. Finally, it's always a good idea to make a quick mental check-off of the above pre-press items before pouring ink in the press.

Print Order

Place your other screens into the press from light to dark (*dark being the outline*). Align your targets or image up to the film on the platen. Now the general rule of thumb in print order goes from smallest area to largest (*on LIGHT shirts*) with the outline being last. On DARK shirts the process is darkest color to the lightest, why? *Light colors contain MORE pigment than darker colors and will lead to excessive buildup; you're encouraged to experiment.*

Test and Record results!!!

Setting up the Job / Registration

- Take your screen and tape it all around the inside, half on the frame, and half on the mesh and place screens in press. Insure that all of your adjustments on the press are in the middle position.
- Check to insure that your off-contact is correct, approx. 1/8" between the bottom of the screen and the platen.
- Place your trap or outline color on the platen and center to desired print location, and scotch tape onto platen.
- Your screen should remain off contact at least 1/16th of an inch as this leads to better ink transference, sharpness and less buildup of colors on subsequent screens.
- Micro-registration is a tool on higher end presses as is the "Joystick" system for dialing in the screen to register. Without a "Joystick" or micro your ability to do minute registration changes is lowered substantially. Less expensive presses rely on the printers ability to line up designs, usually with the assistance of a mallet.

Printing Techniques

- Squeegee angle and pressure. Your squeegee in the print position should be in 1-2 o'clock position. You do need to put a fair amount of pressure when pulling the squeegee towards you. After your print pass the screen should appear to be clean of ink in the image area. If it is; do NOT do a second pass before lifting the screen.
- Spray some adhesive on the platen and then place a test square or pellon on the print platen and make a print onto the test square. Once finished look at your print and make adjustments as needed. And re-print until the image is correctly lined up.
- Mist adhesive is used primarily, but when printing sweatshirts or other fleece garments, you should use a web adhesive.
- Once you have the image all lined up, go ahead and print an actual garment. Please refer to the flashing and curing section first, to figure flash parameters.
- Place your shirts to either side of you and a flash or cure area opposite, and you are ready to roll.
- USE a placement and strike-off form (or production control sheet) and your ready to begin your job.