

Before you Start

Congratulations on starting your screen printing venture! When this package is used correctly, you should be able to screen print high quality images on almost any garment. There can be learning curves and that come into play with this process. Technique adjustments are also an ongoing process in the world of screen printing. The more you print the more you will learn and the better you will get at it. Before you start, we recommend watching the DVDs and reading these instructions all the way through. Understanding the concept in full before you start will make this process a lot easier. It will also help you fill your down time. For example, you can be setting up your clamp press or working on artwork while the emulsion on your screen is drying. Take Notes along the way, and reference back to these instructions as you go.

Convenience Household Item List

You'll want this stuff handy but its not included with your kit

1. Piece of clear glass to cover transparency. Most of the time, you can find one of these in a picture frame. It will need to be at least as big as the image you want to print.
2. Paper towels, old shirts, and/or rags that can be ruined.
3. Spray Bottle with water
4. Access to hose with a good nozzle
5. Ruler, T-Square, or something with a Straight edge and a pen or marker
6. Sturdy Table or Desk. (kitchen table if you prefer, but cover it good with an old table cloth).
7. Scotch Tape
8. Iron or Heat Gun , and Hair Dryer
9. Computer and printer

The process of this kit will differ a little bit from the instructions in the DVD101. We recommend taking good notes in a step by step format as you watch the DVD101, then cross referencing it with these instructions.

Preparation

1. Fill Nutralyze Degreaser (red) and ER80 Emulsion Remover with water.
2. Dampen the screen and scrub pad. Spray 5-10 squirts of the Nutralyze on each side of the screen and lightly scrub.
3. Rinse Screen and scrub pad thoroughly with water when you're done
4. Let screen dry (takes about 20 minutes with a fan on it) You can be mixing your emulsion while you wait for your screen to dry.
5. Mix Emulsion in a light safe area (dark room – see below). **Follow instructions on emulsion.** Stir, and let sit for 15-30 minutes or so. For long term storage, be sure the cap is on tight.

Dark Room Notes

First of all, be sure that you are doing all parts of the emulsion and exposure process in a light safe environment with a yellow bug light or light safe bulb and NO outside or bright light what so ever. This includes mixing your emulsion, coating your screens, drying your screens, exposure, and washout. A dark room can be created fairly easy by using a closet, bathroom, garage, bedroom etc. You can put black cloth or trash bags over the windows to dim the room. A yellow bug light in a lamp is a simple solution for light in the dark room

Coating the Screen (Its best to reference the DVD or www.screenprintingvideo.com for this part)

1. You'll need to create a dark room. See Notes
2. Fill the scoop coater with emulsion so there is about a ½ inch to ¾ inch emulsion in the bottom.
3. Push coater against the shirt side of the screen, then tilt the coater so the emulsion touches the mesh. As soon as it touches, move the coater in an upward motion pressing firmly. Flip the screen around, and coat the ink side)
4. Let it dry for 3-6 hours with a fan. A dehumidifier will help speed up the process but is usually not needed.

Drying Notes

As soon as your screen is coated, place a fan on your screen to help dry it faster and then turn the light off to make the room completely dark. The recommended way to do this, is to place two pieces of wood on a countertop or table and set your screen onto them with the shirt side facing down. If you're in a smaller area, you'll want to clean as much dust as possible off the counter or table. If dust and/or carpet fibers are circulating in the air, they will stick to your screen and that can cause minor problems or set backs further in the process. You want all of your emulsion to settle on the outside or shirt side of your screen. This will create a gasket for printing. With a fan on your screen, the emulsion should dry in about 3-6 hours. Without a fan, let it dry overnight at a minimum. When the emulsion dries, it should turn a darker color than you originally started with. Your emulsion will be dry when it is no longer tacky.

General Emulsion Notes

Be sure that you are not coating your emulsion too thick (a common error for newbies). The emulsion gasket should be paper thin. If you feel that your emulsion has been coated too thick, you should still be able to use it, but keep in mind, your dry times and exposure times will need to be increased by 10-20%. Next time, you can press harder with the scoop coater, or swipe it up the screen a little faster. It will take some practice. Please watch the DVD or go to www.screenprintingvideo.com for emulsion coating techniques.

Create Your Design

Since the emulsion takes a while to dry, this would be a good time to work on your design. It's not hard to create your t-shirt design. For your basic text t-shirts, designs can be made in any word processing program. If you want to create multiple color designs with graphics and logos it would be a smart idea to look into getting either Adobe Photoshop, Corel Draw, or Illustrator. These programs allow you to separate your colors correctly if need be. A clip art program can be very beneficial as well. You always want to create your image all black for film output.

Print Your Film

The film goal is to print a black opaque image on a clear transparency positive or unfiltered vellum paper. You can print this film directly from your home inkjet printer. There are some variables involved when printing your film. For example, if you are printing with an inkjet printer onto a transparency sheet you might need to dry the ink under a heat light or 500 Watt Light exposure stand for 45 – 60 minutes to assure that the ink from your printer dries onto film. Like I said before, you want to get a very dark and opaque black image on your film. For most printers, **you will need to print two copies of your image and stack them on top of each other**. When you hold this your film up to the light, you don't want to see any light through your image. It should be **black**, not light black or grey. You can manipulate the settings on your print driver to help achieve the darkest black in results. You usually want to check all boxes that are related to: Maximum Density, Maximum Saturation, Black Ink Only, Max out the DPI, and choose High Gloss Premium Photo Paper for the paper setting. Your printer settings and variations will vary and will not necessarily have the same names and variations as listed above. Its best to just skim through the driver and select any option that looks like it would darken the image while printing. You'll know when you've selected the right options when the printer slows way down as its printing. If the ink runs, you have too much ink on the film and you will need to back off the settings. If your printer is not printing 100% black films, print 2 or 3 copies and tape them together.

Once your film is completed you are ready to continue making your screen!

Transfer the Image to the Screen

This needs to be done in a light safe room.

1. Make sure the emulsion on the screen is completely dry.
2. Tape the image to the shirt side of the screen in reverse. If it is text, it will read backwards.
3. You want to measure the distance from side to side and make sure the image is centered on the screen. The top of the image needs to be about 2 inches down from the wooden part of the frame.
4. With the film taped to the screen, place the screen on a table or floor with the shirt side up.
5. Place a piece of clear glass on top of the screen. Make sure it covers the entire image.

6. You'll want to turn on the light and hold it about 14" above the center screen for 10-12 minutes. Remember, if you feel your emulsion is thicker than a sheet of paper, you'll want to increase your exposure time by a couple minutes. We sell a PVC stand that has holds the light and comes pre-set to the correct exposure distance. Its available on our website.
7. Take the film off the screen. Keep it in a safe and dry place.
8. Next, you'll need to spray the screen with a hose. If this is not possible in the dark room, put it in a black plastic garbage sack. Take it outside and get it wet while its still inside the bag. Once the entire screen is wet, take it out and spray the screen off with the hose. The best spray pattern is "Flat" if you have an adjustable nozzle. You should not need a ton of pressure to wash the emulsion out. You'll want to work both sides of the screen with medium pressure. The image area will start to change color as you spray, and slowly start to disintegrate. This wash out process will take 2-3 minutes. If the image does not wash out, either the black ink was not dark enough, or somewhere in the process the screen was exposed to light. If the entire screen washes off, it was either not dry when you burnt the image into it, or was under exposed because the emulsion was too thick. There are lots of variables here. See: www.screenprintingvideo.com for details.
9. Let the screen dry before you start printing.
10. Post Exposure. After the screen dries, its always good to shine the light on it for an addition few minutes or take it out in direct sunlight. This will harden up the emulsion and make it last longer. If this process is done correct, your screen and emulsion should last for several thousand prints!

The screen mesh should now be open and look white in those areas. It should match the black image that is on the transparency.

Other notes on transferring the Image

Be sure that your film is very opaque and dark. If you hold it up to a light and can see through it, you probably need to double print your film and stack the film on top of each other to achieve a more opaque image.

Insure that there is a positive contact between your screen mesh and your positive film. If the film is not pressed completely against your mesh then you will get light reflection between your positive screen film and your screen which will result in a blurry and not clear image. The piece of glass is used for the positive contact in the above directions.

If you have to take your screen outside to washout and you have no other options. Be sure that you take it outside in a black trash bag and do not expose to light during movement. Also be sure that you are washing your screens out in a dark shaded area or at night if possible. If any bright light gets onto your screen during the washout process you might have problems washing them out completely.

Remember, from the time you mix your emulsion, to the time you burn your image with the light, anything with emulsion on it should not be exposed to any bright lights. You can not expose your screen with emulsion on it until after the image is completely washed out.

Block Out the Edges of the Screen

The screen will most likely have a rectangle line that has washed out where the edges of the glass were. It will also have openings around the edges of the screen. You will recognize these areas because you will see white mesh instead of the emulsion. You will want to use the Screen Block Out tape to cover there open areas on the screen. If you prefer, the next time you use your screen, you can fill the edges of the screen with emulsion also. Just make sure that area gets exposed too.

Press Set up

1. You will want to clamp the press to a sturdy table or desk
2. After you clamp the press to the table put your screen in it.

3. Lower the screen to the print board as if you are going to print
4. You want the screen to be hovering 1/8th inch above the white print board. This 1/8th gap is about the distance of 2 pennies and is know as the off contact area.
5. You can adjust the off contact area by raising, lowering, and tilting the lower platen board. To do this, you will want to use a wrench and lightly loosen the nuts and bolts attached the to the black angled pieces. Do not loosen them too far. Its best to keep them lightly snug.
6. Once the off contact is 1/8th inch between the print board and screen, raise the print board back to an up right position.
7. Take the Pro Bond Printers Pallet adhesive and put a dab in the center of the board. The dab should be no larger than the size of a quarter. Take an ink card, and spread the adhesive all of the top board. Once its evenly spread, you'll want to warm it up with a hair dryer or heat gun. That will activate the adhesives and you will only need to do this once.
8. Load the Ink. Its best to take an ink card, plastic spoon, or even a soft spatula to spread the ink. Put a line of ink on the part of the screen that is furthest away from you. Make sure it goes almost the entire width of the screen. It only needs to be about an inch wider than your image.
9. Test print. Take an old shirt, cloth, or even paper and put it on the print board.
10. Take the squeegee and pull the ink towards you. You'll want to press very light on the first pass, then make the same printing motion again pressing very firmly. If your image is not opaque enough, you can repeat that process. If you're using a dark color of ink on a light shirt, you shouldn't need to. Keep the squeegee at a 70-75 degree angle tilted towards you as you pull. Also known as the 11 or 2 o'clock position. When ink builds up on the side of the screen closest to you, you can very lightly push it back with the ink squeegee.
11. Now that your item is printed, lift the screen back to its up right position.
12. If you see the image you're looking for, great! If something doesn't look right, you'll want to make some adjustments and keep testing until they look right. We have several videos about printing techniques and do's and don'ts at www.screenprintinvideo.com.
13. Remember, this ink dries similar to house paint. Its always trying to dry. You need to keep it moving as much as possible. If you stop to answer a phone call, have lunch, or just take a break, its best to clean up before you do so. Another option is to keep a spray bottle filled with water handy. You can mist the ink to keep it wet. That will slow down the dry time. If you mist it too much, the ink will become runny and can distort your image so be careful not to add too much water.

Printing and Curing a Shirt

Now that your test prints are looking good. Its time to print a shirt!

1. Load the shirt and get it as straight as possible.
2. Smooth out any wrinkled or lumpy spots on the shirt
3. Print the shirt
4. Lift the screen and un load the shirt.
5. Its best to put the shirt on an old table or desk. You will be curing the shirt with heat, and it can warp your print board over time. A warped board will result in inconsistent off contact. If you do not have an extra table, that ok. You can cure on the board, but the life expectancy will go down. The board should last for 6-24 months depending on how many shirts you're curing on it.
6. With the ink still wet, lightly lay a piece of Silicone Parchment paper over the image. Do not slide this around or you might smudge the ink.
7. Once your iron has heated up, you iron the parchment paper for 10-30 seconds depending on the size of your image. Most likely, you will want your iron on medium to medium high. When you're done, if the ink color smudges to the touch of your finger, either turn the heat up or increase the iron time. If the shirt or parchment paper is burnt, lower the temp on the iron or iron for less amount of time.
8. The ink can be cured, but still feel wet. You can let these air dry for 12-24 hours if you chose, but a much faster process would be to print a few, then throw them in a household dryer or use a hair dryer. This will evaporate all the moisture and finish up the curing process. **IMPORTANT:** Make sure the ink does not smudge to the touch on any of your garments before you dry them in the dryer or mix them with any other clothes.

Notes: You will probably not want to stop printing to complete the last part of the drying process. Stopping will put the ink on your screen at risk of drying on the screen. You'll want print a shirt, cure it with the iron (10-30 seconds), set it aside, print another and repeat. When you're completely done with all your printing, clean up the ink on your screen and squeegee before you start the drying with the hair dryer or house dryer process. If you are selling these to a customer, it would be good to print an extra shirt and run it through the washer. If any ink fades or cracks, the shirts are under cured and will need more curing.

Cleanup

Once you are done printing it is time to clean up. If you are using Matsui 301 Enviro Series ink, (included with a stock Hobby Kit) its water based ink. You can use water for the clean up. The ink is environmentally safe and its not harmful to rinse minor residue down the drain. Its best to scoop or wipe any excess ink back into the container or onto paper towels, then throw them away. Any ink that has dried on anything while you've been printing will most likely stain. If the image area or mesh area of your screen is lightly stained, that's ok as long as the mesh looks open. There is a difference between stained mesh and clogged mesh.

Reclaiming the Screen

At this point, you're going to have to decide whether or not you want to keep this image on the screen for future printing. If you think you'll print it again I the near future, store it in a clean and dry place. Its good to order extra screens and keep them on hand in case you want to print another design, and keep your old ones. If you know you'll never be printing that image again, its time to reclaim.

1. Take the ER80 Emulsion remover bottle and fill it with water. It should have about an ounce of chemical in it to begin with.
2. If you have any tape on your screen, remove it.
3. Wet the screen in a utility room sink or outside.
4. Spray 5-10 squirts of the ER80 on to both sides of the screen and scrub it around with a scrub pad. Scrub each side for about 10-15 seconds.
5. Let it sit for 1-2 minutes. You should see the emulsion start to soften and run. **Important:** Do not let the screen dry with emulsion remover on it.
6. With a Strong pressure hose (pressure washer works best) spray out the emulsion on the screen.
7. Most, if not all of it should wash right off the screen. If there are any thick areas or spots, you can give them a mist of ER80 and scrub those individual spot and repeat wash out process.
8. Before you coat this screen again, you will want to degrease it again with Nutralyze.

Other Important Facts and Tips:

1. If you like how your image turned out, either keep your screen and/or the film in a safe place so you can re-use it some day.
2. Emulsion shelf life is about 6 months before its mixed, and about 3-6 weeks after its mixed
3. If you want to coat a screen so its prepared for a later date, the life is about 2 weeks. Store in a pitch black area with absolutely no lights! You can also store them in black garbage bags.
4. Extra screens are always good to have! The emulsion coating and burning process usually has the largest learning curve. If you goof up, having extra screens that are ready to go will save you hours of time while you're waiting for the emulsion to dry. Professional large screen printing shops usually keep several screens on hand that are already coated in case of a mistake.
5. Re-ordering supplies usually take 1-7 days to arrive and expedited shipping methods are very expensive so give yourself a cushion and re-order your supplies before you run out!
6. Ryonet (www.silkscreeningsupplies.com) is a supplier of inks, chemicals, equipment, and complete shop packages. Our packages range from \$150 to \$150,000.
7. At any point, we are ready to take you and any of your screen printing needs to the next level!
8. This kit has profit potential out side of being a Hobbyist. We have supplies, equipment, chemicals, and tools that can make screen printing easier, faster, and more profitable. If you're struggling with any part of it, there is usually a simple fix.
9. Do not be afraid to use our support chat, email, and phone. Our mission is your success! The more successful you are, the more successful we are, so please ask questions!

10. We do not recommend buying shirts from a large retailer. If you have a business license, there are several wholesale shirt shops in the industry that will sell to you. With or without a business license www.ShirtSpace.com has affordable apparel. Quality white shirts such as a Gildan should cost you under \$1.75 and less than \$2.50 for colors. You can save 10% at shirtspace by using this discount code: **AD2009L**

Thank You Once Again for Your purchase. We hope you enjoy!

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