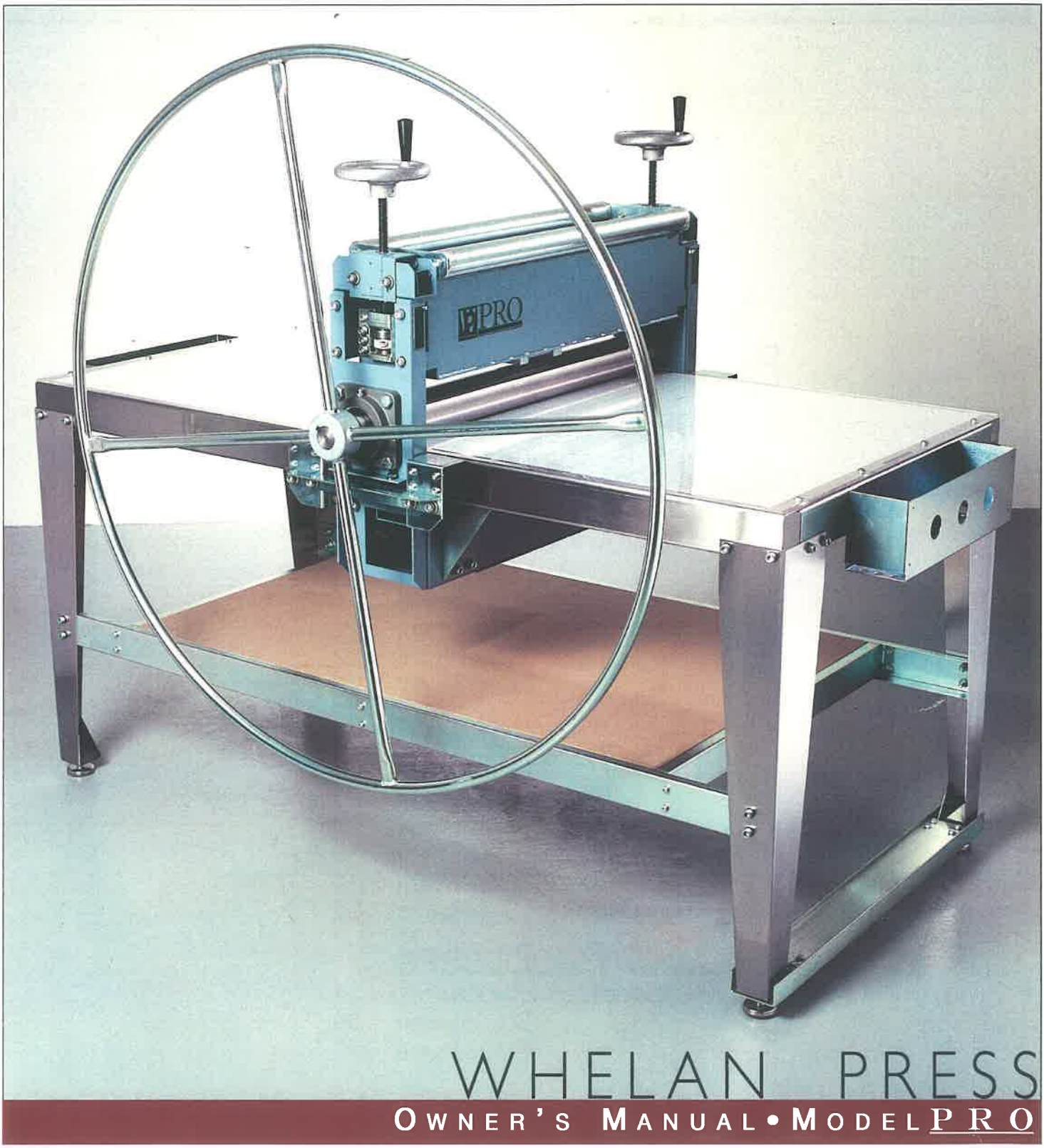

WHELAN PRESS

OWNER'S MANUAL • MODEL PRO

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Volume 3

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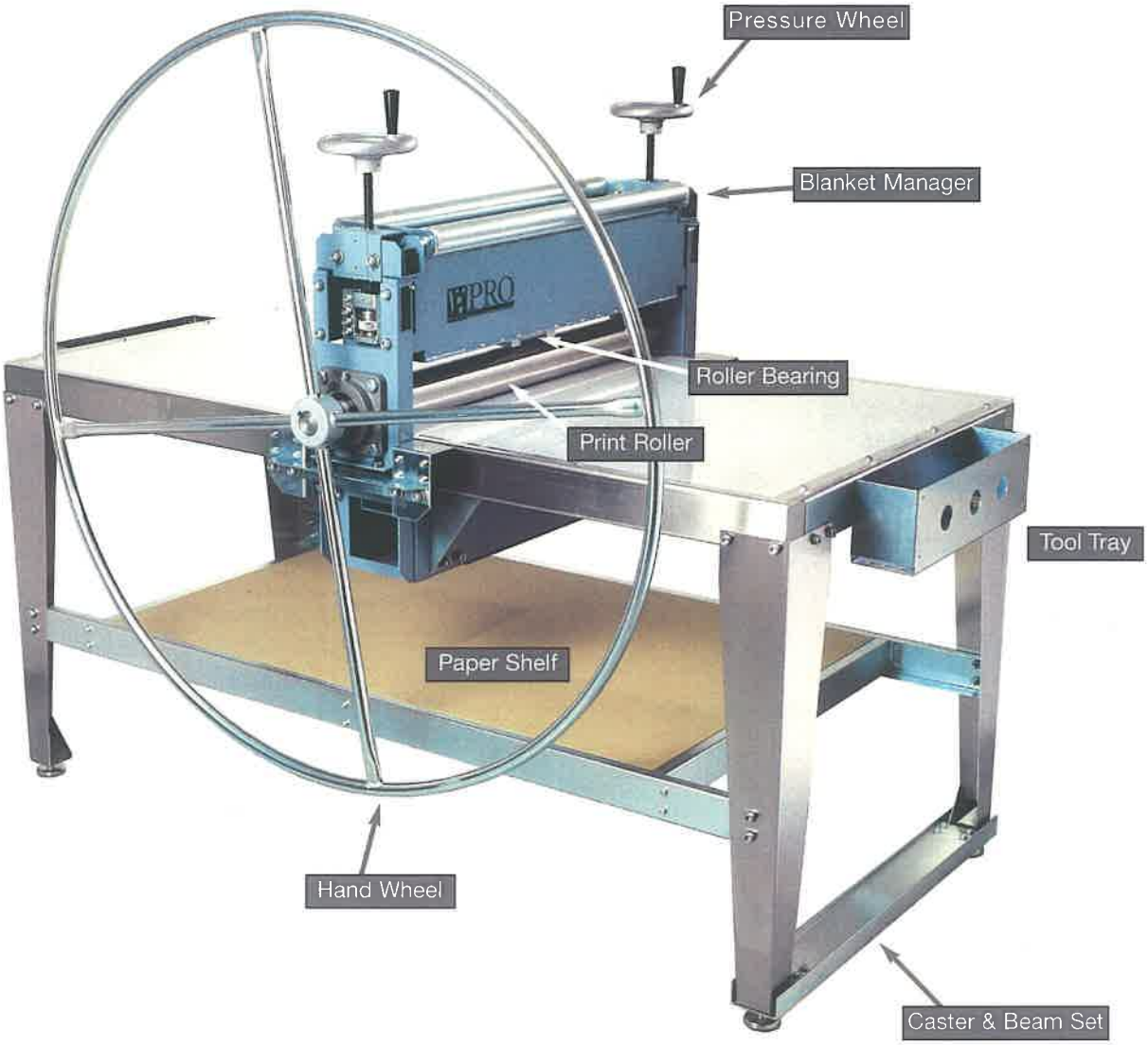

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PRINTMAKING RESOURCE LIST

General Printmaking supplies:
Daniel Smith
4150 First Avenue South
P.O. Box 84268
Seattle, WA 98124-5568
Phone: (800) 426-6740
Fax: (800) 238-4065
Web site: www.danielsmith.com
Catalog available

Graphic Chemical & Ink Company
P.O. Box 7027
Villa Park, IL 60181-7027
Phone: (630) 832-6004
Fax: (630) 832-6064
Catalog available

R & F Encaustic Sticks
110 Prince Street
Kingston, NY 12401
Phone: 800-206-8088

Lab Safety (e.g., disposable gloves):
Lab Safety Supply Inc.
P.O. Box 1368
Janesville, WI 53547-1368
Phone: (800) 356-0783
Fax (800) 543-9910
Web site: www.labsafety.com
Catalog available

Solvents:
SoySolve
6154 N. CR 33
Tiffin, OH 44883
Phone: (800) 231-4274
Fax: (419) 992-4595
Email: sales@soysolv.com
Web site: www.soysolv.com

Caplugs
Protective Closures Company
2150 Elmwood Ave.
Buffalo, NY 14207
Phone: (716) 876-9855
Fax: (716) 874-1680
Email: sales@caplugs
Web site: www.caplugs.com
Part number: H450C21B

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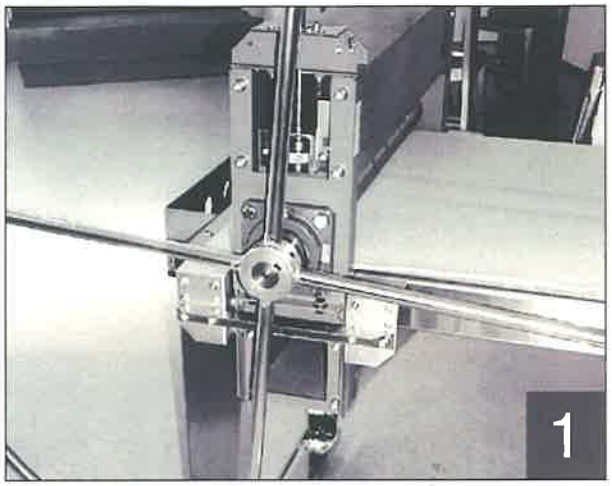
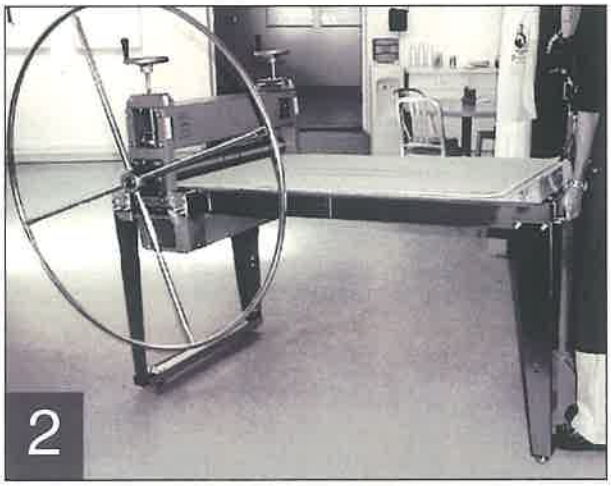
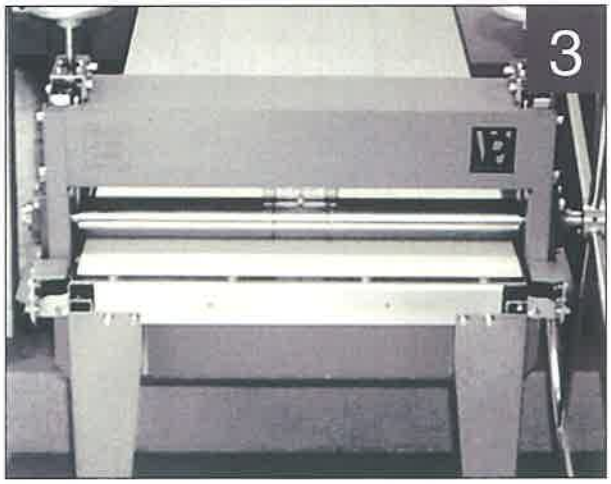
The WHELAN PRESS is designed to be moved easily around your studio with the caster and beam accessory.



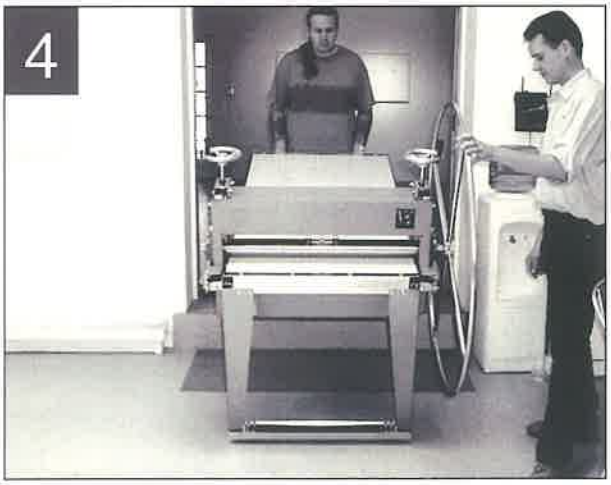
Move print roller to end of bed with the caster/beam. This will shift weight of the print roller over casters.



From the opposite end lift and roll press.



For steps and stairs, move print roller from end to end, shifting weight as necessary.



You will need two string bodies to lift the press up and down stairs.

BE SAFE! DO NOT ATTEMPT TO MOVE PRESS OVER STEPS ALONE.

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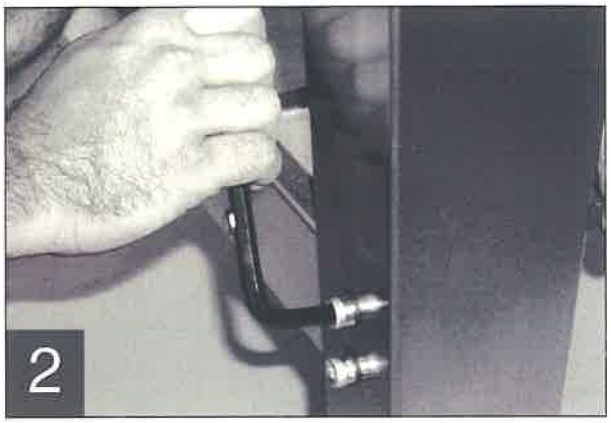
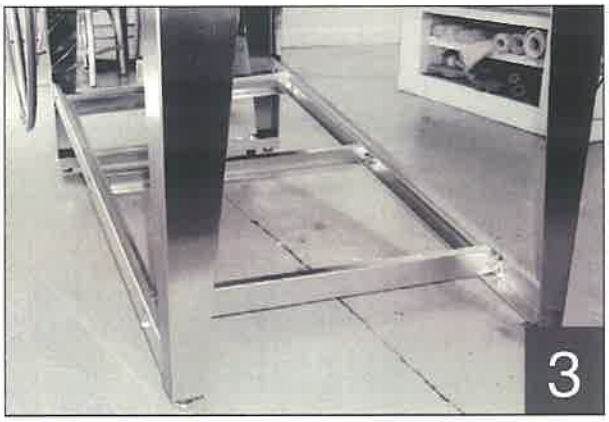
Lift MDF shelf by pushing up from underneath. Remove shelf panel and set-aside.

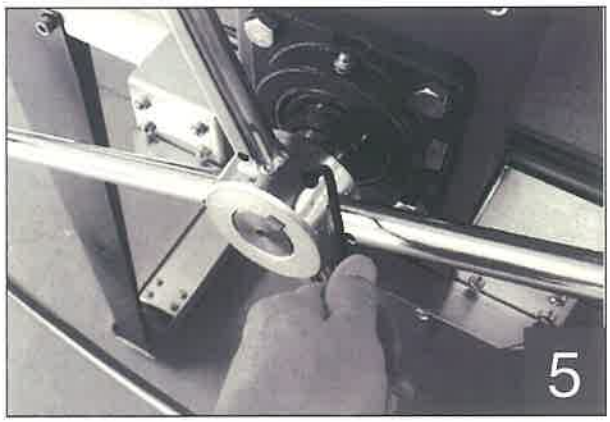


Use the allen wrench set [included] and pliers to remove the hex-nuts on all four legs.

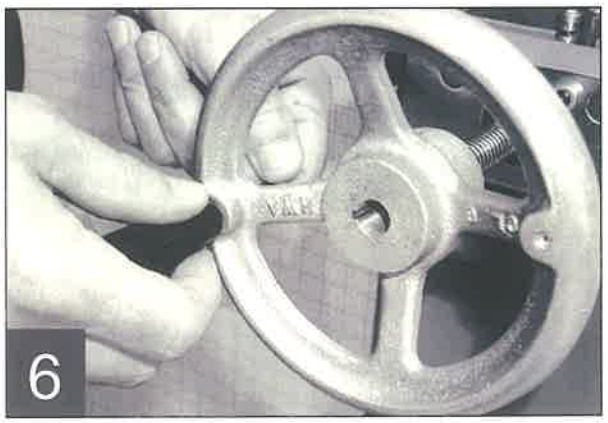


Allow shelf frame to rest on floor. Do not remove cross pieces.

Angle shelf frame as shown and slide out end without caster set.

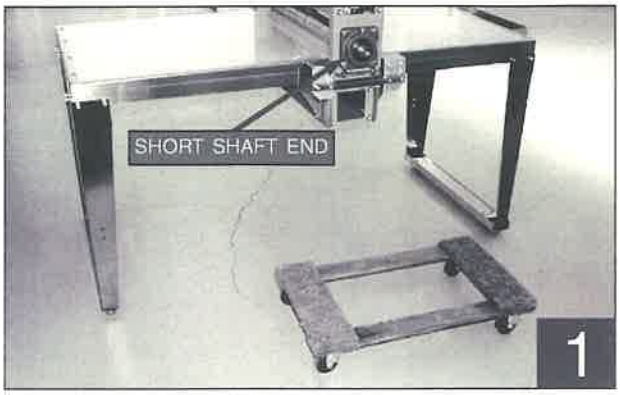


Loosen the two set screws holding the hand wheel as shown. Slide wheel off print roller. Do not lose set key.

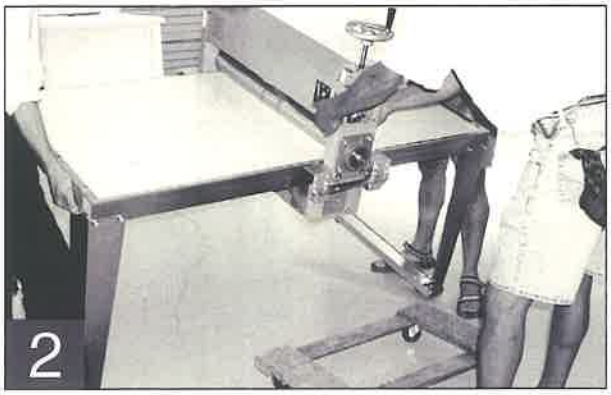


Loosen and remove hex screw on back side of handle and unscrew.

MOVING THE PRESS • THROUGH 32" DOORWAY



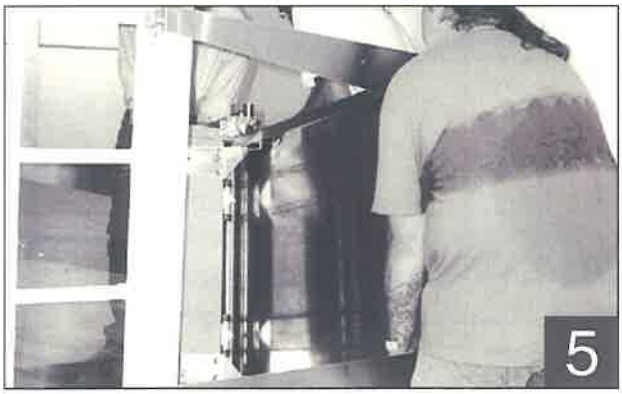
Locate print roller in middle of bed. **APPLY MAXIMUM PRESSURE TO LOCK ROLLER IN PLACE.**



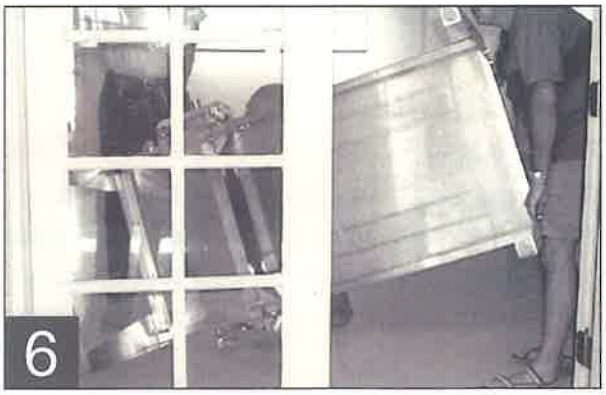
With caster set attached gently tilt press on legs. THIS REQUIRES A MINIMUM OF THREE PEOPLE TO PERFORM SAFELY.

Align and center on dolly. Weight should be supported on side rails of press bed.

Position press next to door and angle-in. Lead with caster end and walk through doorway.



With a minimum of three strong bodies (four is better), pick press up and walk around door.



Once through doorway - gently lay press on two legs and tilt up.

IMPORTANT! FOLLOW DIRECTIONS TO REMOVE SHELF, HAND WHEEL AND PRESSURE HANDLES FIRST.

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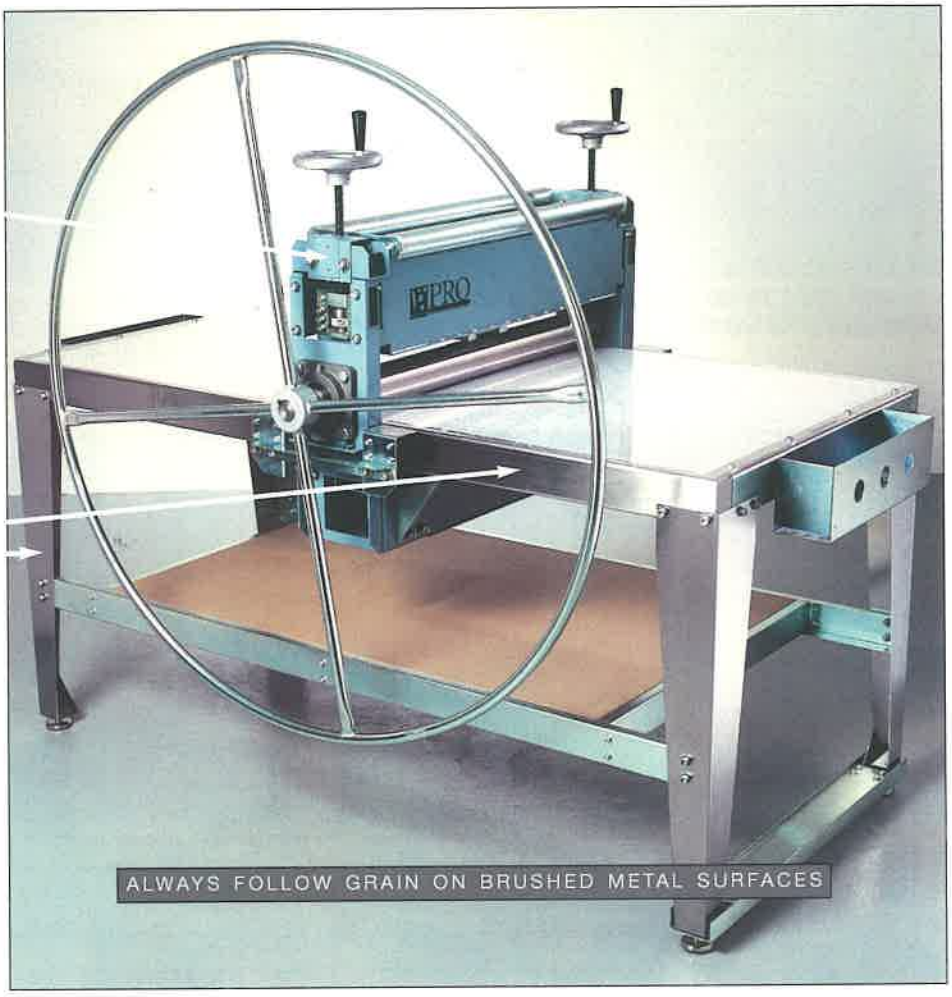
The WHELAN PRESS is easy to clean and maintain. The bed, legs and rollers are solid stainless steel. Other parts are zinc plated or 2-part epoxy paint.



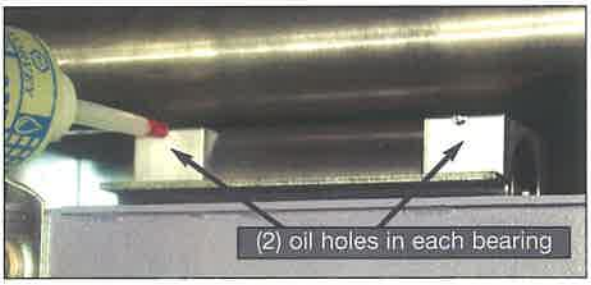
PAINTED SURFACES:
Rubbing alcohol will remove ink and solvent residue. Always use a soft cloth or paper towel.

STAINLESS STEEL AND ZINC PLATE SURFACES:
We recommend using an oil-based stainless steel cleaner (such as Sterling, pictured above) on all surfaces *except* the bed top. A water-based cleaner is recommended for use on the bed top as this will not leave an "oil" residue that could stain the registration grid.

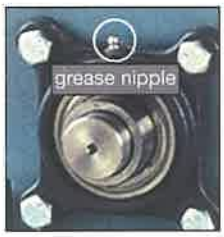
Print Roller:
Periodic cleaning of the print roller will keep rubber from accumulating on the surface of the roller. Use alcohol or stainless steel cleaner and follow the grain of the roller.

Bottom Roller & Underside of Press Bed: Bottom roller and the underside of the press bed should be kept clean and free of dirt. After moving your press inspect the underside and clean if necessary.

BEARINGS



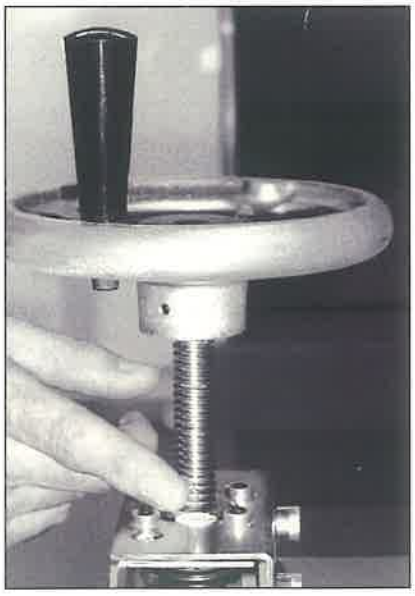
Oil bottom and top roller bearings with supplied Zoom Spout oil as shown.



The WHELAN PRESS is designed to last a life time with minimal care. We have provided grease points on the roller bearings and flange bearings as shown above. The roller bearings require more frequent lubrication than the flange bearing. Frequency is based on use, always oil if the print roller does not spin freely. Under heavy use, oil the three roller bearings (1 on top and 2 on bottom) annually with the supplied Zoom Spout oil. The flange bearing should be lubricated once a year. Simply attach a standard grease gun to grease nipples as shown.

PRESSURE SCREW

Occasional hand lubrication of the pick-up nut is necessary. We recommend using any wheel bearing grease annually, or as needed. Apply a small amount of grease to the top of the pick-up nut as shown and press into stem threads. Raise roller to advance pick-up nut and distribute grease.



Grease gun and wheel bearing grease available at any auto-parts store.

Zoom Spout is included with press.

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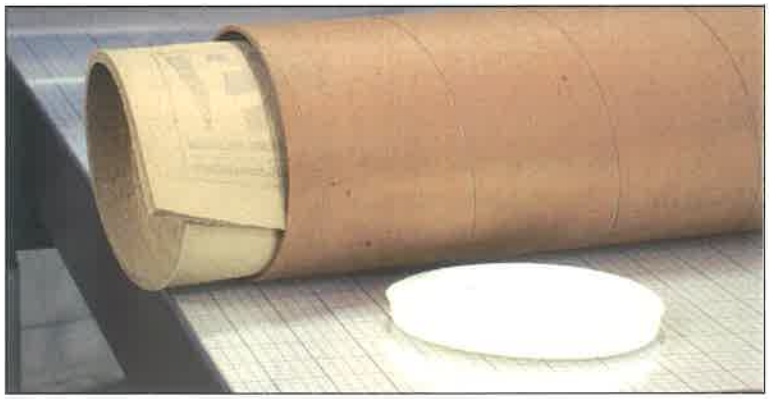
You should always position the print roller on either end of press and apply pressure when not in use. Because the WHELAN PRESS has a flexible stationary press bed, you will not warp the bed.



Prolong the life of your rubber blanket and minimize drying by storing your blanket in the tube when not in use for long periods of time. Under normal conditions rubber blankets should be replaced annually.

Because the rubber blanket will not stay compressed long term pressure may be applied without damage to blankets. After printing simply advance print roller to either end of bed and set pressure to "3".

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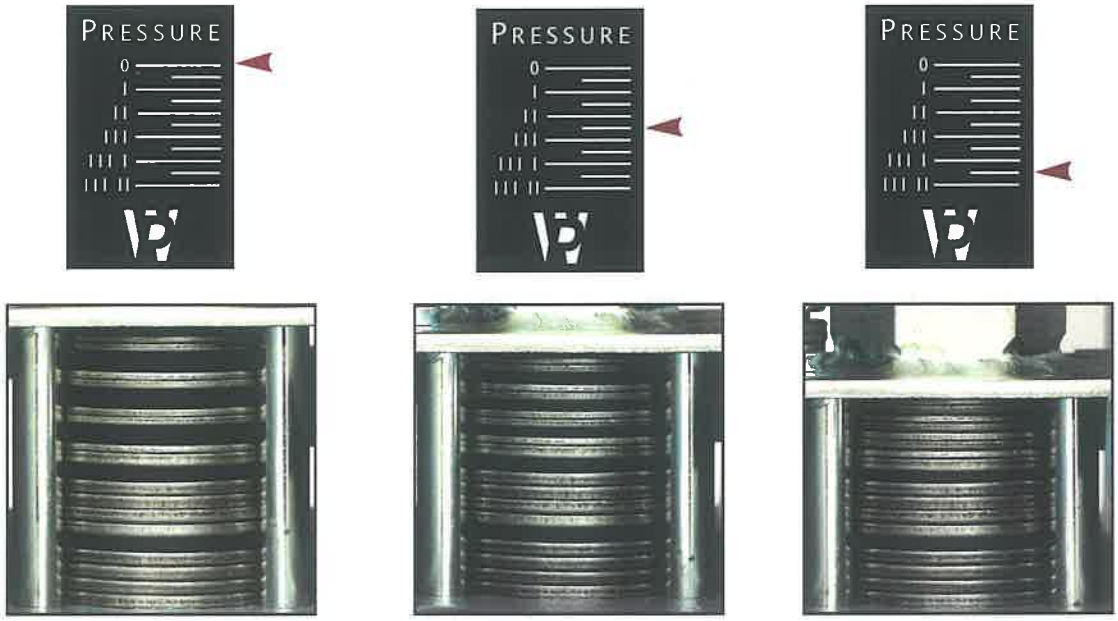
The WHELAN PRESS features a patented spring-loaded print roller allowing for direct control of force and pressure. The pressure gauges located on both sides of the press measure the compression of the steel springs. This is both accurate and repeatable. The steel springs will never lose force.

When the print roller is lowered onto the plate the steel springs begin to compress and apply force. You can see the amount of compression/force on the pressure gauges measured in values of "0 to 5". You may establish a pressure setting either on the plate or off the plate. It is important to remember that the pressure "off" the plate will be less than the pressure "on" the plate. This difference can be considerable depending on the thickness of the plate. We have found that most people prefer to set the pressure "off" the plate with the roller resting on the blankets and bed. Either way is fine; techniques and pressure settings shown in this manual are "off" the plate except where noted.

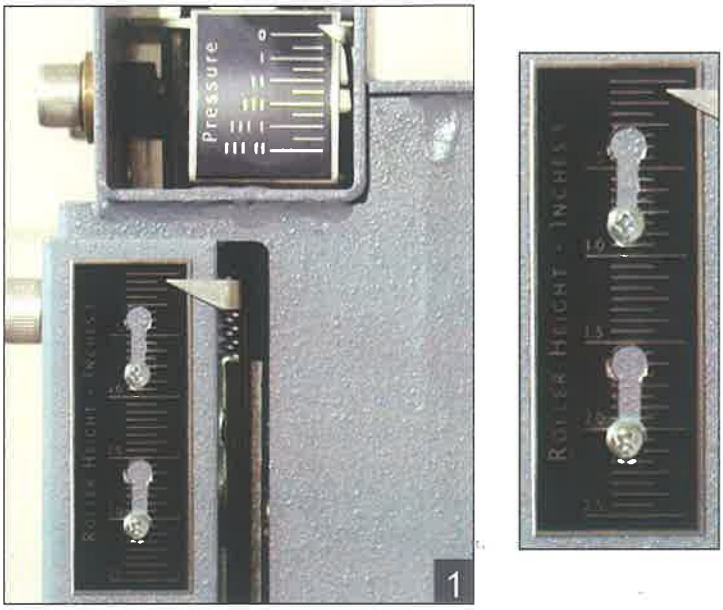
The pressure gauges are used to establish level and apply pressure. Roller height gauges are *not* intended for this use unlike traditional press design. Roller height gauges are a guide only for working with tall blocks where the starting height of the print roller is well above the bed.

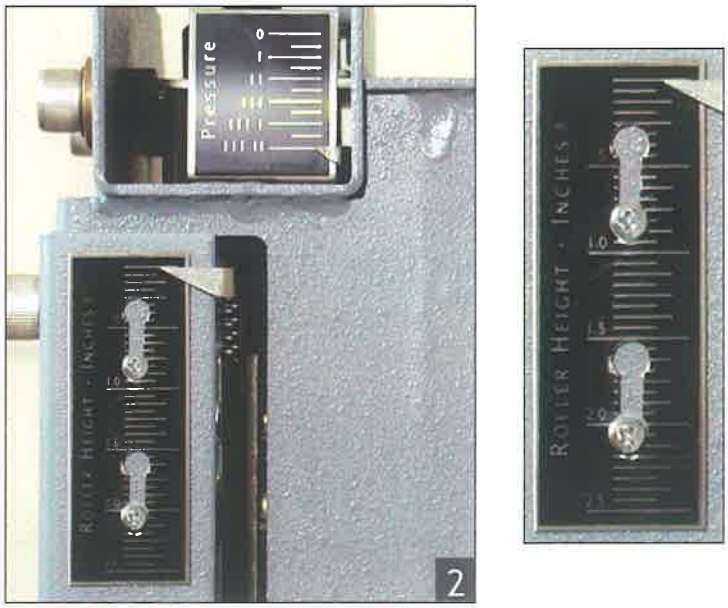
For print applications where the starting roller height is above the bed set pressure on the plate before it is inked. Once set you can make changes while printing if necessary.

STEEL SPRINGS COMPRESS AND FORCE IS APPLIED TO THE PLATE.



Roller Height Gauges indicate height of the roller only and should not be used to establish level or pressure.





The Whelan Press features two press gauges, the Pressure Gauge and the Roller Height Gauge. The Pressure Gauge measures printing force and level pressure. The Roller Height Gauge is a visual reference for the height of the print roller above the bed. The Roller Height Gauges *SHOULD NOT BE USED TO SET PRESSURE OR LEVEL*. Changes in pressure and differences in the compression of blankets, paper and plate will effect the height of the print roller making this measurement unsuitable for setting pressure. In Figure (1) pressure is set to "0" and the print roller is resting on the acrylic bed cover, the Roller Height Gauge reads 1/16" above 0. Under maximum pressure the Roller Height Gauge reads "0" as shown in figure (2), due to the compression of only the acrylic bed cover.

For greater accuracy and ease, use only the Pressure Gauges to set printing pressure and level. Maximum pressure is the complete compression of the steel disk springs. With the print roller resting on the bed cover and the springs fully compressed the pressure gauges will read "5" as shown in figure (2).

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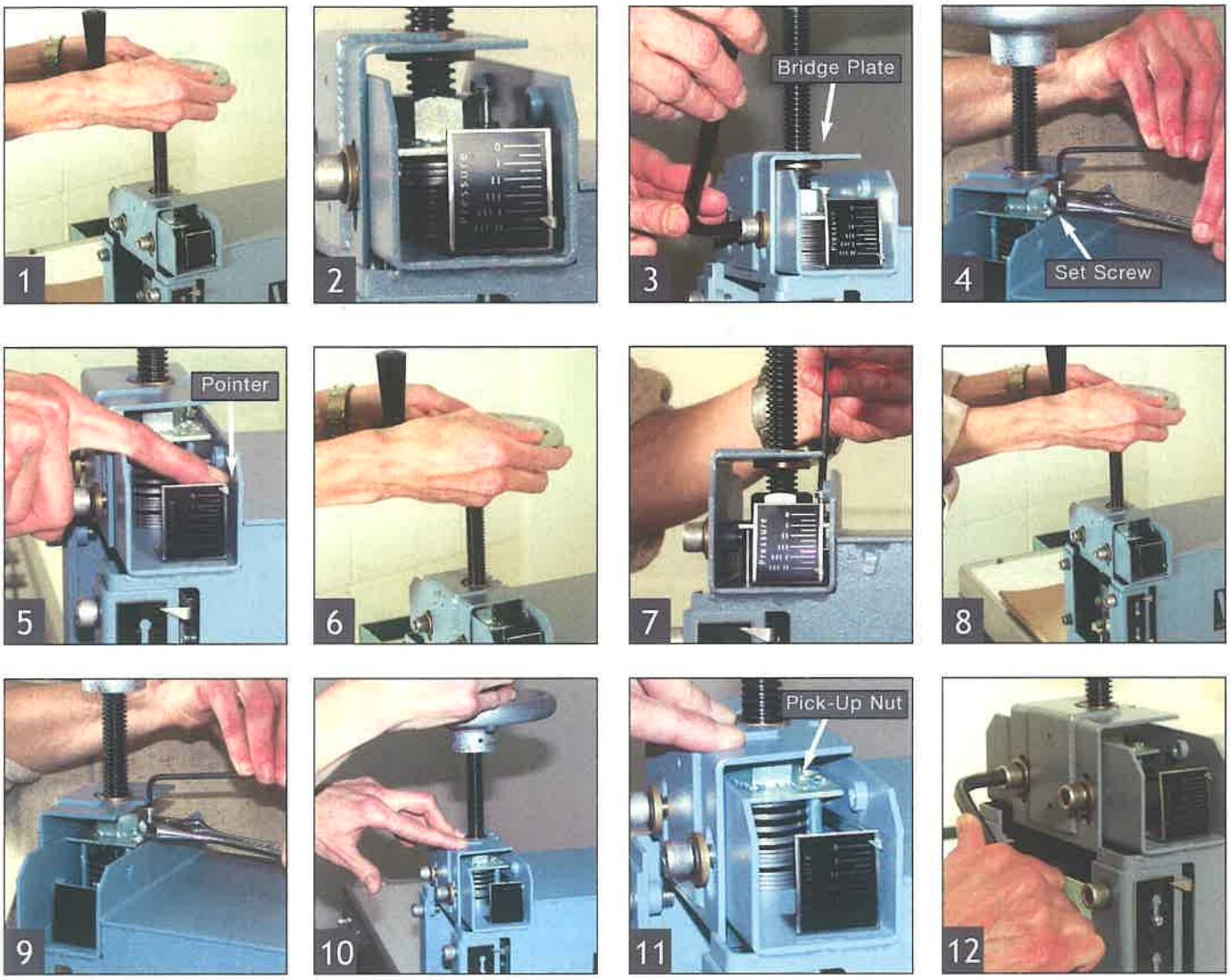

If needed the Whelan Pressure Gauges are easy to recalibrate. Simply follow the instructions using the allen wrench set supplied with your press. **Please call us before you begin this recalibration.**

1. With the roller resting on the bed cover, fully compress the disk springs by turning the pressure wheel clockwise.
2. If the pressure gauge reads less than "5" you should reset the gauge.
3. Loosen the bridge plate, leave screws loose and in place.
4. Turn the pressure wheel counter clockwise to expose the set screw. Loosen the set screw as shown.
5. Apply pressure while aligning the pointer to the side of the gauge plate as shown.
6. With the pointer in place, turn the pressure wheel clockwise to maximum pressure.
7. Using the 9/64" allen wrench, adjust the pointer to "5".
8. Turn the pressure wheel counter-clockwise to relieve pressure and raise the set-screw.
9. Tighten set-screw.
10. Position the pointer to the side of the gauge plate and slowly turn the pressure wheel till the pointer reads slightly above "0"
11. Push the bridge plate down and make contact with the pick-up nut.
12. Level the bridge plate and tighten screws.

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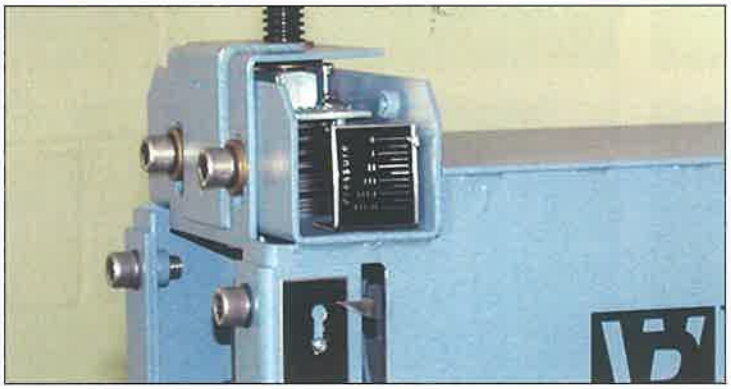
Most printmaking methods will begin with the print-roller resting on the blankets and press bed. Depending on amount of force being used and the profile of the plate edge, you can climb plates up to 1/2" in thickness. For printing Glass Plate, Linoleum or Wood Block you must use a template or print with the paper up and the plate down.

Begin by establishing level and "0" pressure on the print roller by turning the pressure wheels on either side of the press. Depending on the starting height of the roller, you will either be lowering the print roller or relieving the pressure on the print roller.



With the print roller resting on blankets and "0" pressure indicated on both pressure gauges you now have a level print roller.

Important! Roller Height Gauges indicate height of the roller only and cannot be used to establish pressure.

To apply pressure, rotate the pressure wheels clockwise to the desired setting on each pressure gauge. Maximum pressure is the complete compression of the steel disk springs. The full clockwise rotation of the pressure wheels will apply 5000 pounds of spring force. Actual print pressure on the plate will be much greater depending on plate thickness. You may also set different pressure values on either side depending on the characteristics of your plate and ink.

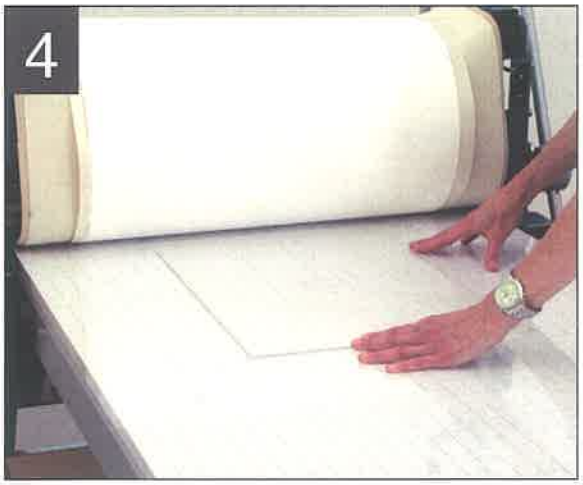
Raise and lower each side of the roller beam equally. Roller beam should be close to level at all times.

IMPORTANT! Place a sheet of newsprint between the print paper and the felt sizing catcher to keep the print from sticking to the dry felt and moving across the press bed. This will also protect the felt by preventing ink transfer from the print.

Lay the print paper face down and align to the paper corners on the grid.

Lay down smooth, clean newsprint.

Trap the paper and the newsprint by advancing the print roller over the paper edge. Pull back the paper and blankets and lay over the beam.



Place the plate ink side up and align to the grid.

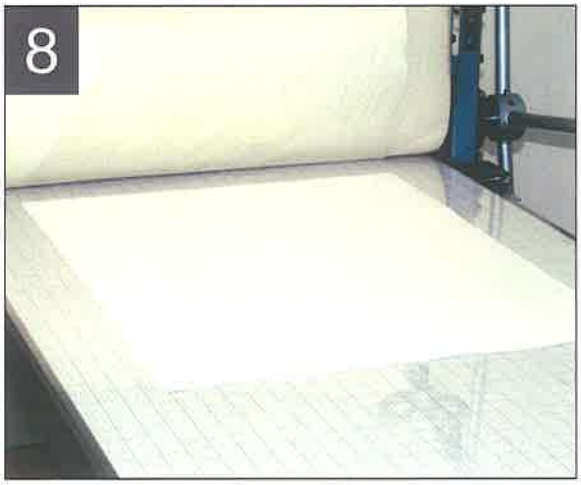
BLANKET MAINTENANCE. When not in use for long periods of time, store rubber blanket in tube. This will slow the effects of drying. If static electricity is present spray Static Guard on back-side of felt (next to rubber). Under normal conditions the rubber blanket should be replaced annually.

IMPORTANT! Don't be careless with your blankets. Take time to remove folds and wrinkles from the felt sizing catcher before printing. You can permanently crease the felt causing future image problems.

Lay newsprint and paper down on plate.

Place blankets and remove any wrinkles. Set pressure using the Pressure Gauges only.

Advance roller by either pushing or pulling hand over hand on drive wheel.

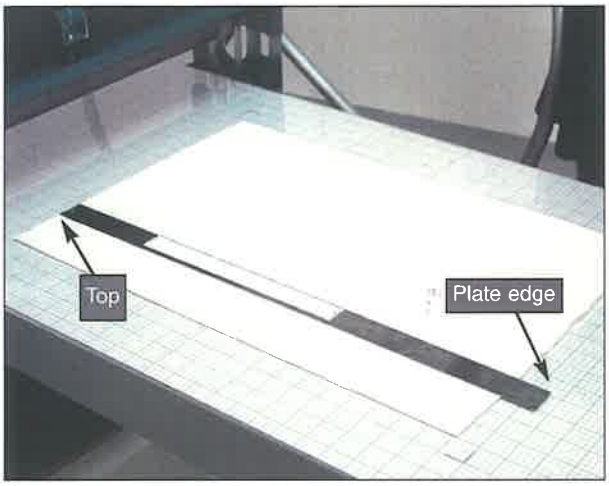


Advancing roller to the end of the bed will disengage paper as shown.

WHEN NOT PRINTING LEAVE THE ROLLER UNDER PRESSURE AT EITHER END OF BED AND SIMPLY WALK AWAY. THIS WILL NOT DAMAGE THE WHELAN BLANKETS OR PRESS BED.

To register a Linoleum Block paper up and plate down use a ruler and the registration grid. First place your paper face up and registered with press grid. With a flat ruler that is longer then your paper, mark your plate location. Below we used a length of artists tape the exact dimension of the plate.

LINOLEUM BLOCK - WITHOUT TEMPLATE



Paper is moistened and ruler set in place.

A damp chine-cole element with wheat paste is placed face up and paste down.

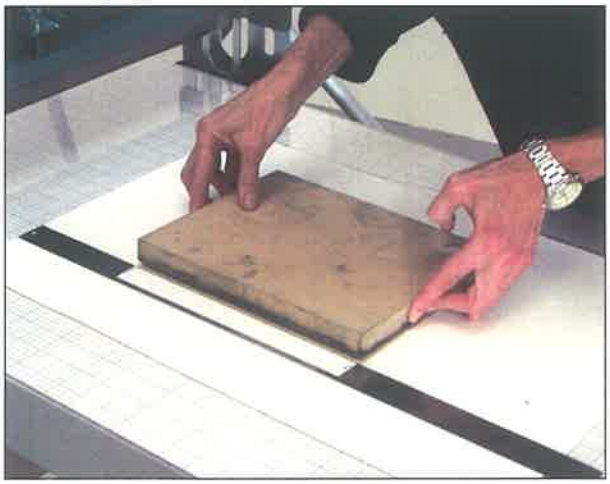
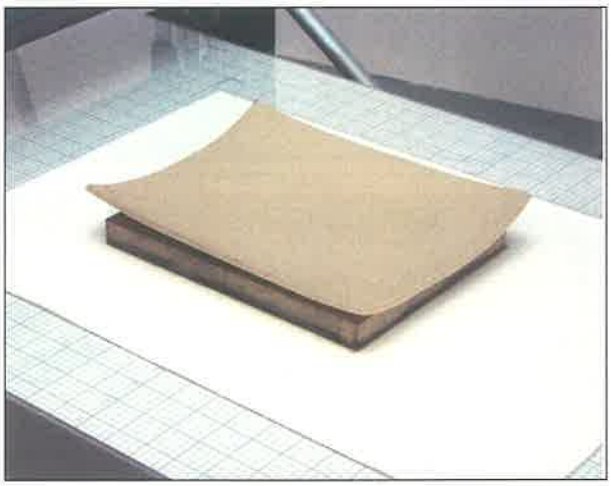


Plate is positioned using the tape/ruler target face down.



Rubber blanket 1" larger than plate is used. Do not use felt.

TIP! USE OLD RUBBER BLANKETS TO MAKE MINI-BLANKETS.

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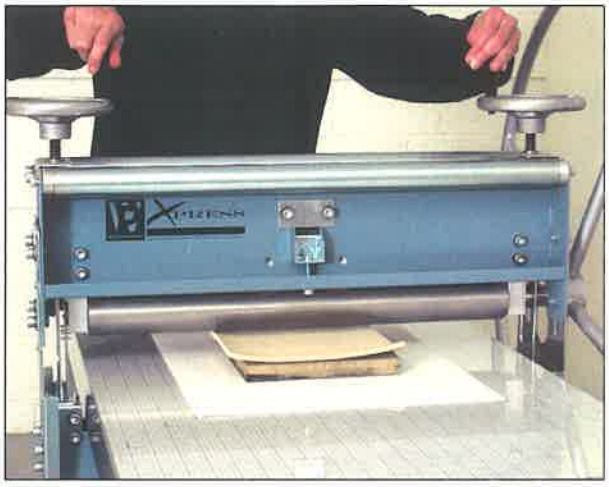
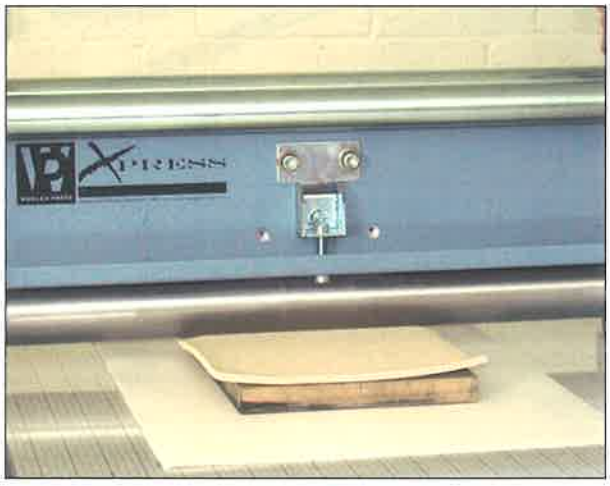
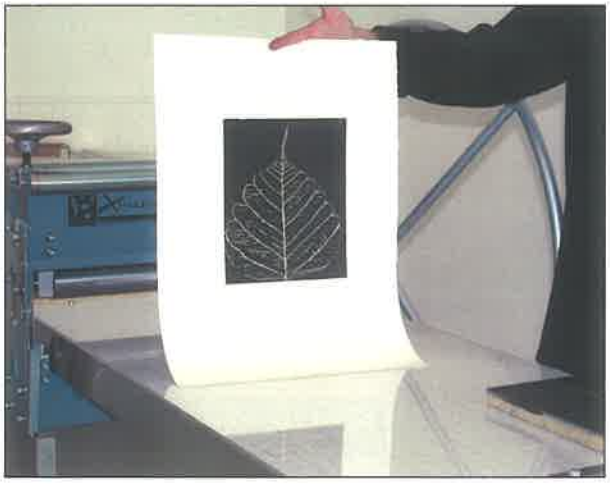
With the roller raised push the beam over the plate and lower the roller onto the blanket and plate back. First level roller using roller height gauges then apply pressure. This technique requires more pressure, set both sides then advance roller. Do not go over the edge of the plate. Approach the plate edge slowly, the rubber blanket will provide traction to print the edge. Go back and forth across the plate and stop. Raise the print roller and pull the beam away from the plate.





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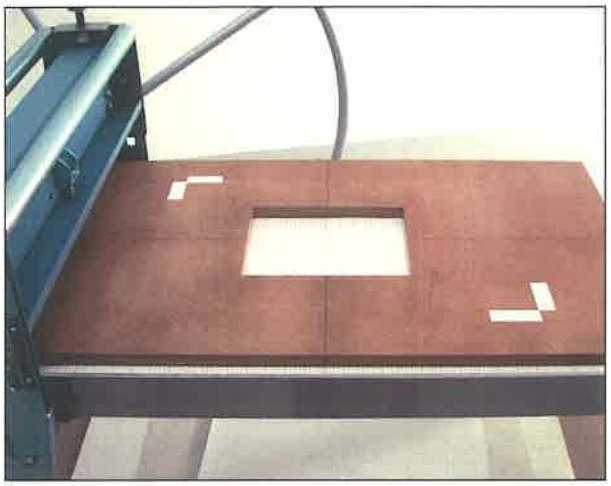
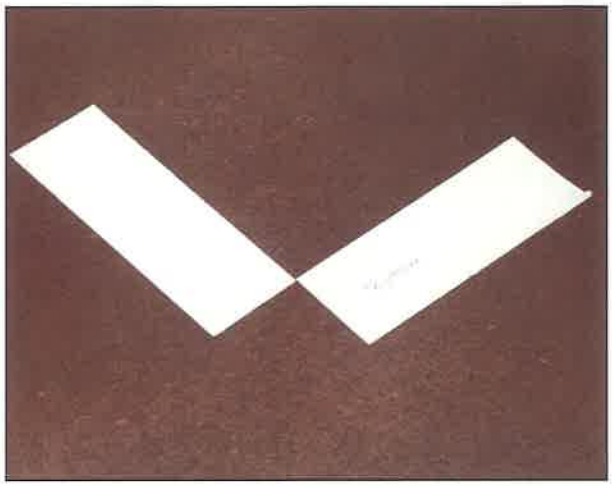
To register a Linoleum Block using a template simply locate the corners of your paper with tape as shown. Leave your paper trapped either with the print roller or a paper weight for multiple plate impressions.

LINOLEUM BLOCK - WITH A TEMPLATE



Template centered on the press bed.



Paper corners marked with artists tape and top/bottom noted.

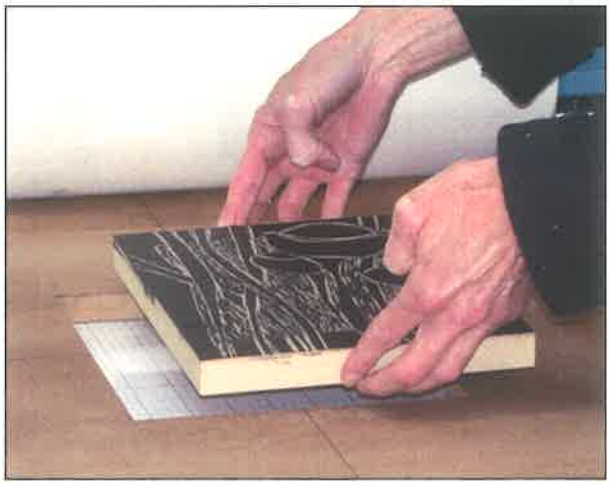
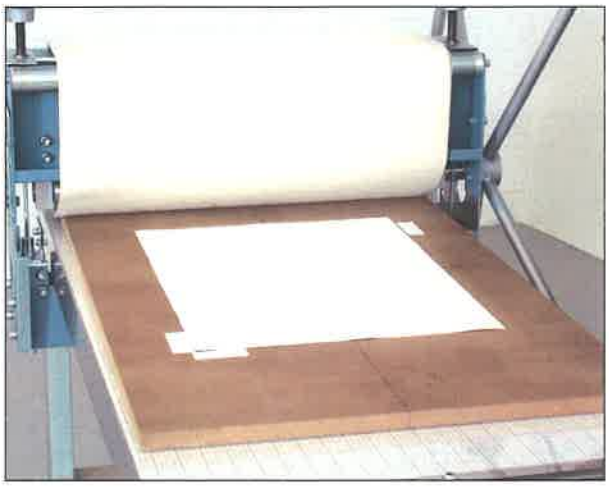
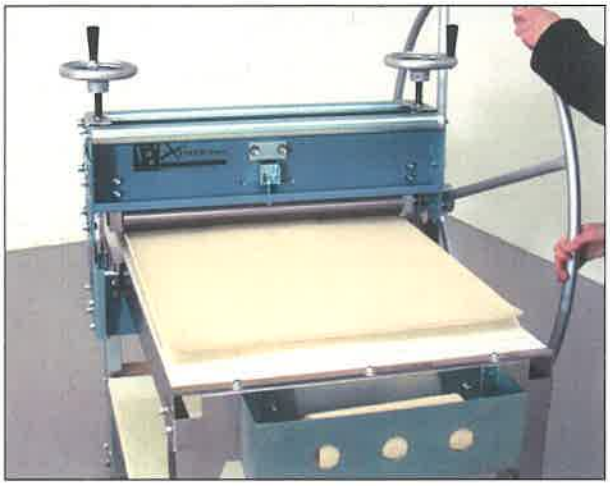


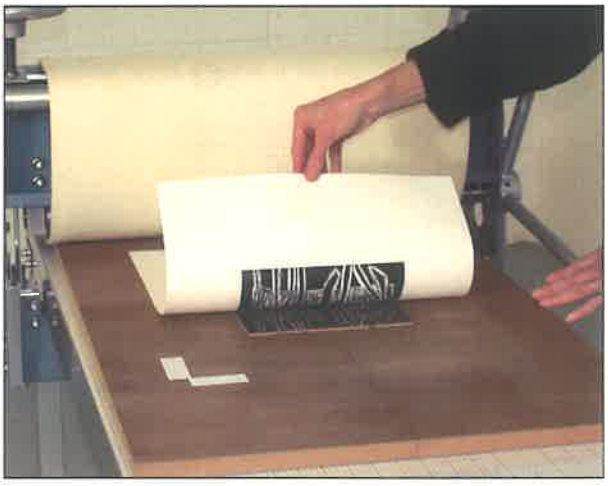
Plate inked and dropped in template.

The plate is 3/32" higher than the template creating an embossed plate edge when printed.

Set pressure and lay paper. The wide template insures the print roller will be level to the press bed, simply adjust the Pressure Gauges to the desired setting. Less pressure is required than printing with the plate down. Because the plate is higher than the template and the plate edge is square (not beveled), we are using soaked 250 gram etching paper. In addition to the embossed plate edge printing plate up and paper down will also provide embossing of the recessed lines in the plate.

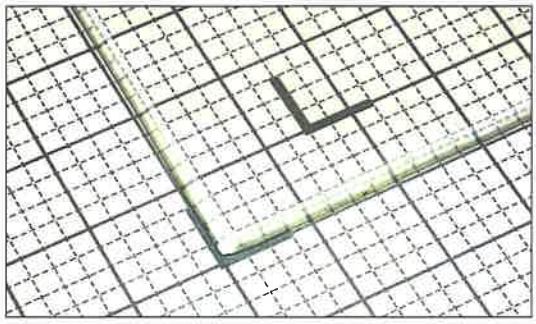






The ink we used was Daniel Smith Water Soluble Relief Ink. This is a wonderful non-toxic ink that is rich in pigment and has a nice roll out. For best results work with damp paper and work fast as this ink drys quickly on the slab and plate. Easy water clean-up, we recommend using a damp sponge for cleaning the plate. Note: When cleaning wood blocks do not submerse in water. Excessive water will warp the wood.

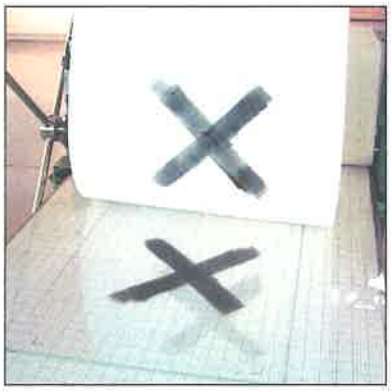
In this example, we are printing on a flat acrylic plate 1/8" in thickness with a beveled edge. We are using oil-based inks with Rives BFK paper that has been soaked. When printing with dry paper, we recommend using a thinner 1/16" plate. The thinner plate will not over-stress the dry paper or cause wrinkling from the plate corners. The pressure setting shown is "off" the plate. Remember that printing pressure will be considerably greater on the plate. If using a thinner plate you would increase the pressure.



1/8" acrylic plate with bevel.

Oil based brayer lines.

First impression "light".

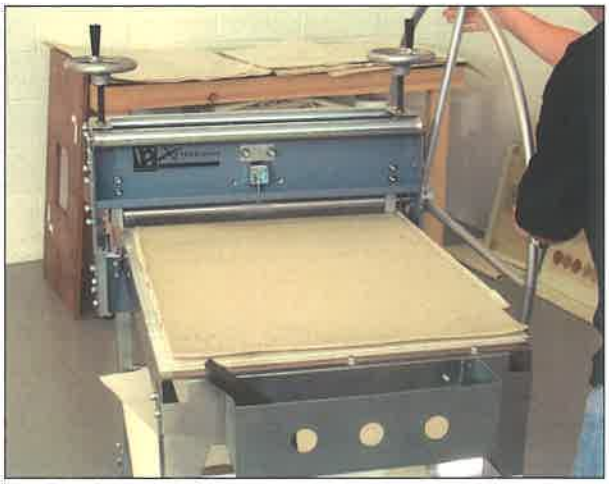


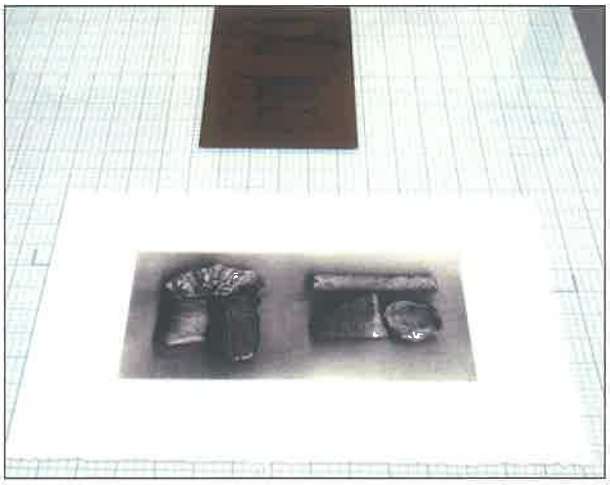
Second impression with more pressure.

"You can always add pressure - but you can't take it back." Measuring spring force is so accurate you will soon know the correct settings to use, based on plate and ink conditions.

Tip! It is a good printmaking practice to step-down pressure. First apply the lightest setting, then increase the pressure as needed after inspecting your print.

Solarplates are thin and require high pressure. File the plate edges and plate back to remove any burs that might scratch the bed cover under high pressure. Always use newsprint between paper and felt. Dry felts will stick to moist paper under high pressure. Typical pressure settings are 4 to 4 1/2. Plate edges can be easily cleaned using a QTip Swab and remember to wipe ink from back of the plate before placing it on the press bed. For best results properly soak etching paper or mist lightweight papers.





If using a waterbased ink do not clean plate with water. We recommend using SoySolve or Baby Oil. Water will degrade the plate surface.

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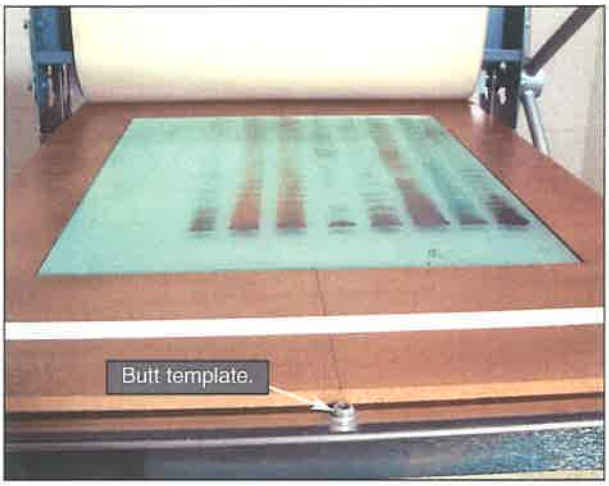
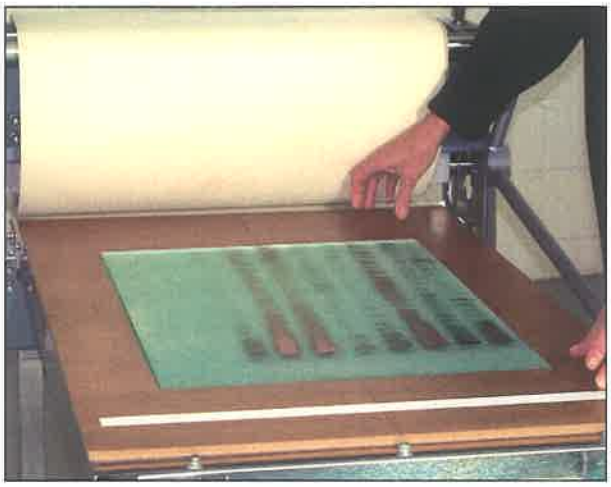
When printing glass plates always exercise great care when moving your plate around and on the press bed.

Clean Press Bed. Wipe bed cover clean and make sure surface is smooth and free of any debris.

Wipe Back of Glass Plate. The back of the glass plate must also be clean and free of debris. Not doing so may cause the glass to crack under high pressure.

Match Template Thickness to Glass Thickness. The plate edges are very fragile and will easily crack if template is too low.





Template dimensions are: 3/8" thick, 23 1/2" wide, 38" long. This size accomodates a 22" x 30" paper size and is short enough for the roller to be disengaged (off the template). When removing the plate lift the template off first.

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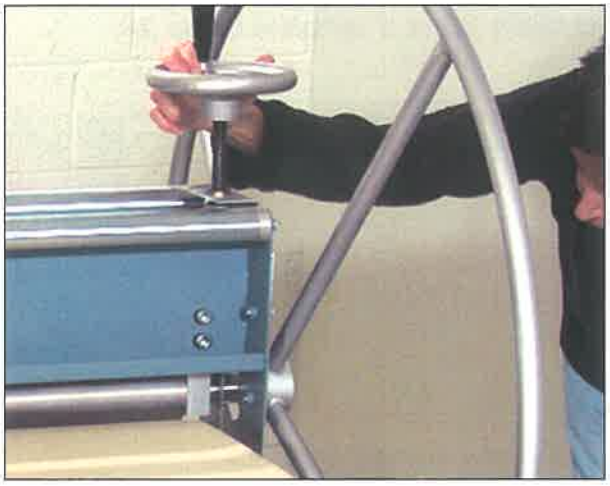
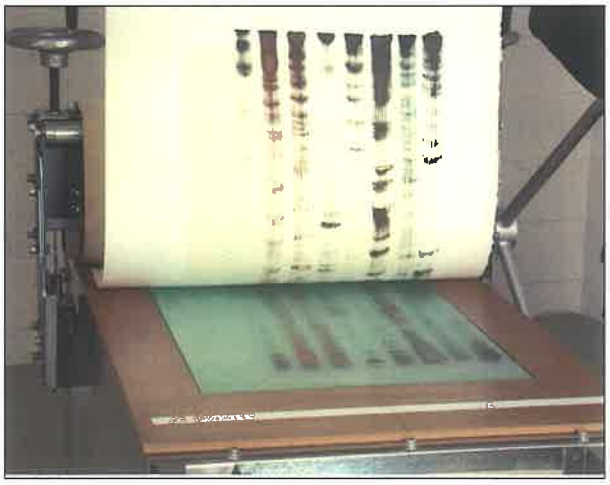
With print roller on template lay paper and blankets down then set pressure. For multiple drops mark back of paper at center lines of template. Paper and template must be removed before changing plates. To remove the template elevate the print roller and push to the open end.





We recommend using 3/8" thick glass available from any glass store. Edges should be "seamed" not sharp. If needed use 400 grit sand paper with sanding block to smooth edges.

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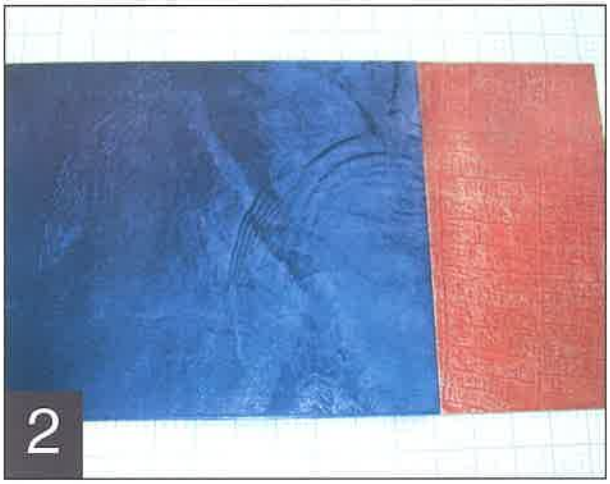
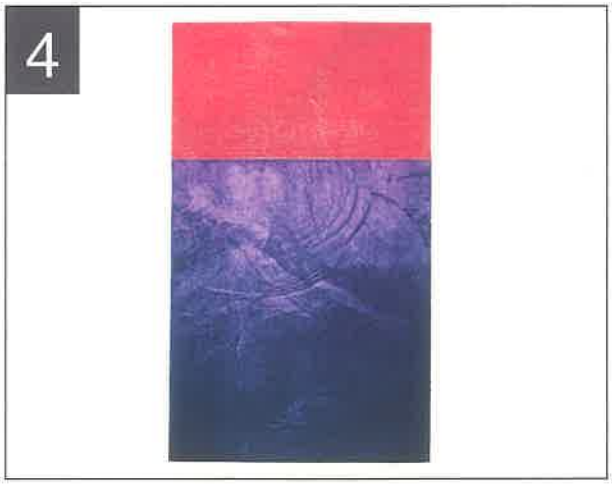
Because Aquatints have a very shallow groove to catch and hold the ink, a great deal of pressure is required. The quality of the ink body and the moisture content of the paper are critical components of a good image. Printing at high pressure using a thick 16 gauge plate will push the paper to its stretch limit, be careful not to over-soak your paper and use a high quality 250 gram or greater etching paper. Shown below is a pressure setting "off" the plate of 4.75. Actual printing pressure on the plate is much greater due to the thickness of the paper and plate.

TIP: At high pressure settings (above 4) add pressure in small increments. A half rotation of the pressure wheel adds several hundred pounds of force.

Spread ink with a mat chip, pressing ink into grooves.

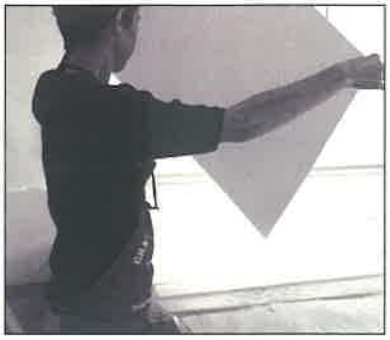


Two plates side by side and centered on the bed.



IMPORTANT: The WHELAN PRESS is designed to operate at pressure settings of "5" off the plate(5000 pounds of force). At this setting the ability to climb at plate is almost "zero". Do-not try to climb a thick plate - you will damage your plate and possibly damage your press.

SOAKING

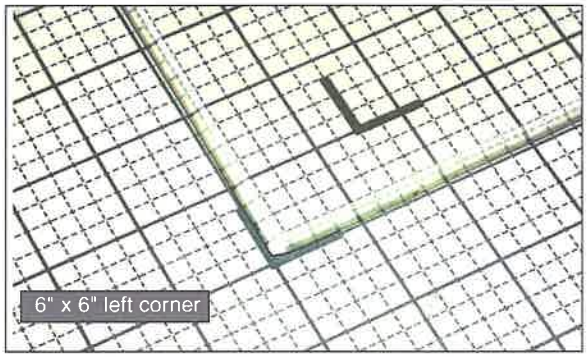

When using a water tray, be careful not to over-soak. Usually 15-30 minutes for intaglio plates and 5-10 minutes for monotype (flat plate) is sufficient. Remove your paper from the tray and allow the excess water to flow off one corner as shown. When you can count the drips, you are ready to blot.

BLOTTING

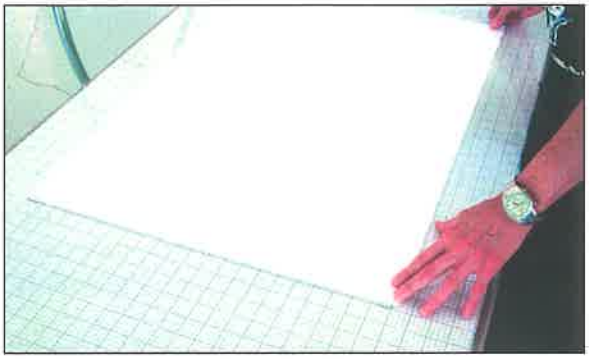

We recommend using newsprint or blotter paper; both are lint free. Sandwich the soaked paper between the newsprint and rub the back to remove excess water. Repeat as necessary. If you can see a water sheen on the surface - blot some more. Water repels oil (ink) so having too much water on the paper's surface will result in a weak transfer of ink (image).

Calendering. Paper always stretches when run through a press. Under more pressure - more stretch. When printing high pressure multiple drops you should always pre-stretch or calender your paper. Calendering dampened paper pre-stretches the paper, otherwise the paper is longer on the second run than on the first. You can calender three pieces of print-making paper at the same time by making a sandwich of one blotter on the bottom, followed by one piece of paper, another blotter, paper, blotter, paper, blotter, then blankets. Run all of that through the press under high pressure two to three times then return the paper to the damp pack. When ready to print, the stretching that would occur on the first plate has already happened, so the paper is relatively dimensionally stable.

REGISTRATION & CALENDERING



Record the registration measurement of your plate (one corner) on the backside of your print.



Center paper on the grid. Common paper sizes are indicated with bold corner graphics.

Tip! For large runs, editions, and complex registration, make your own "target" of plate and paper. Use a light weight paper or newsprint, trace plate and paper then slide under the acrylic bed cover.

TRAPPING

Large sheets can be engaged in the roller.

Heavy metal bar covered with duck tape.

Lay down the blankets before you remove the paper weight.

Pick a method of registration that works for you and stick with it. One technique is to always register the bottom left corner of the plate. If you get turned around you will always know where the bottom left corner goes.

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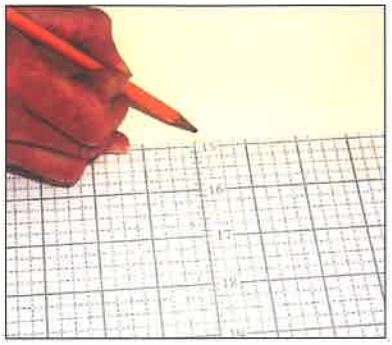
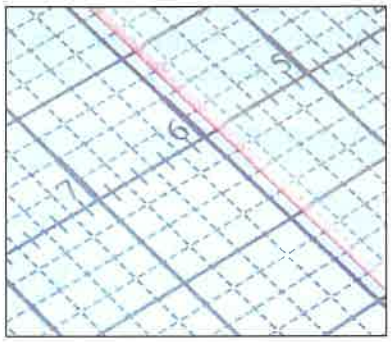
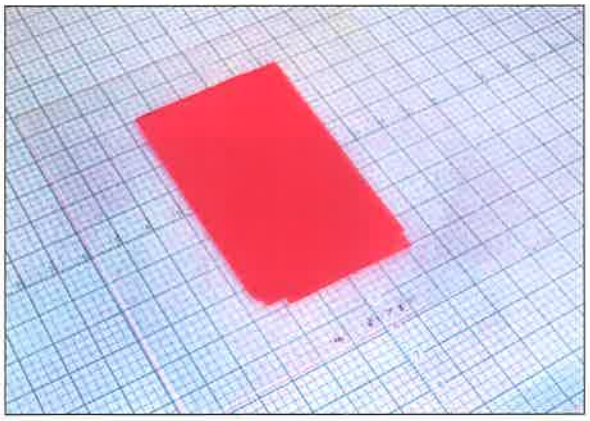
REGISTER PAPER AND PLATE

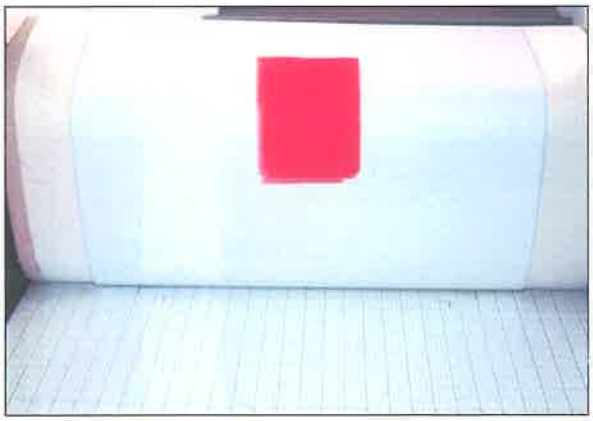




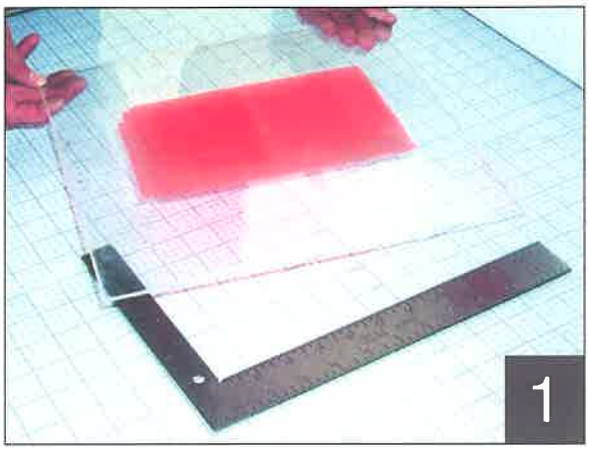
On the back of your paper, mark the vertical and horizontal center lines from the grid. If your paper "trap" is lost you can recover the registration. Capture your paper with a paper weight and locate your printing plate plate using the registration grid.

TRAP PAPER

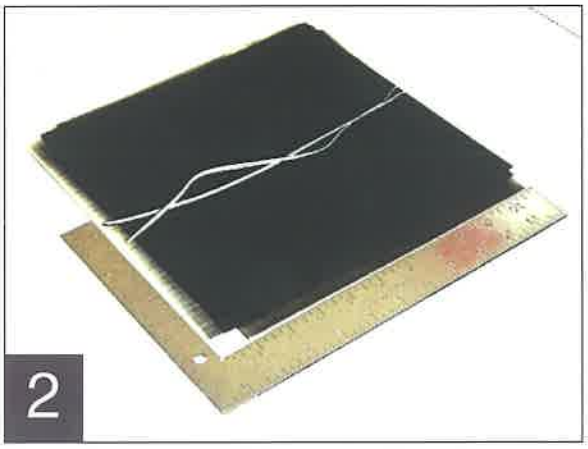




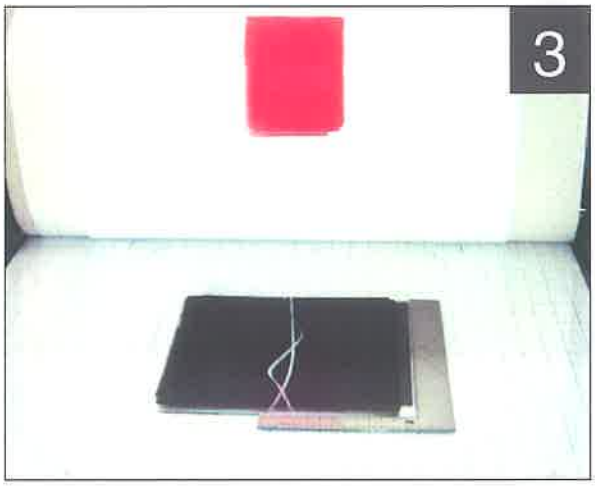
Print the first plate and leave your paper engaged in the roller. If paper size is small use a paper weight.



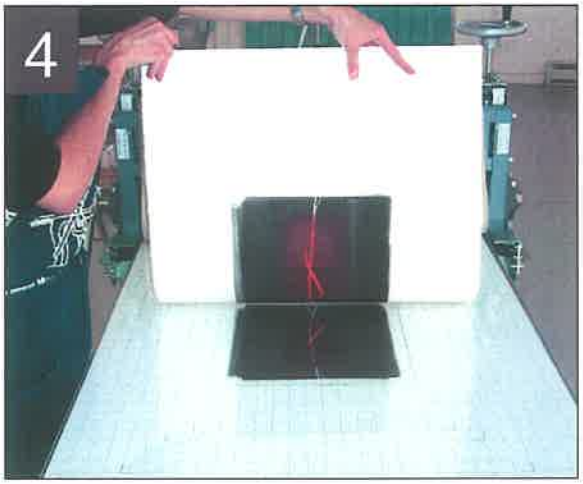
Use a tri-square to mark the exact placement of your plate.



Place the second plate against the tri-square.



Remove the tri-square and drop the paper.



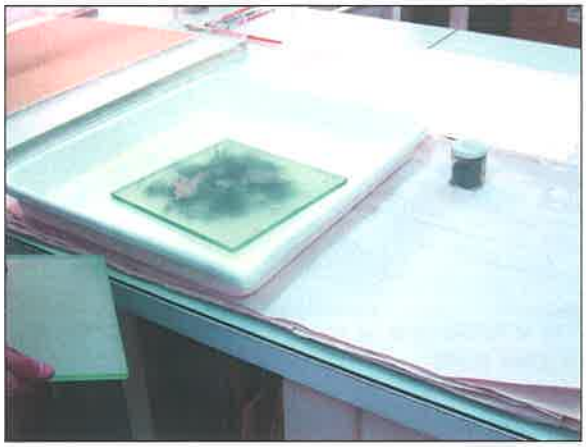
Finished print.

Tip! If you lose the registration of the paper or plate you can print upside down. Place print (paper) face up on bed and position the plate on top facing down.

Note! This is a dirty process. Take the proper precautions to keep the print area clean. We suggest using 3/8" glass. Thinner glass may be used with extreme care. You grain one piece of glass with another, always working with two pieces. Glass may be re-grained and used again. The second "graining" requires much less time and effort.

GRAINING GLASS PLATE

Use 220 grit carborundum. Make a shaker by punching nail holes in the lid.

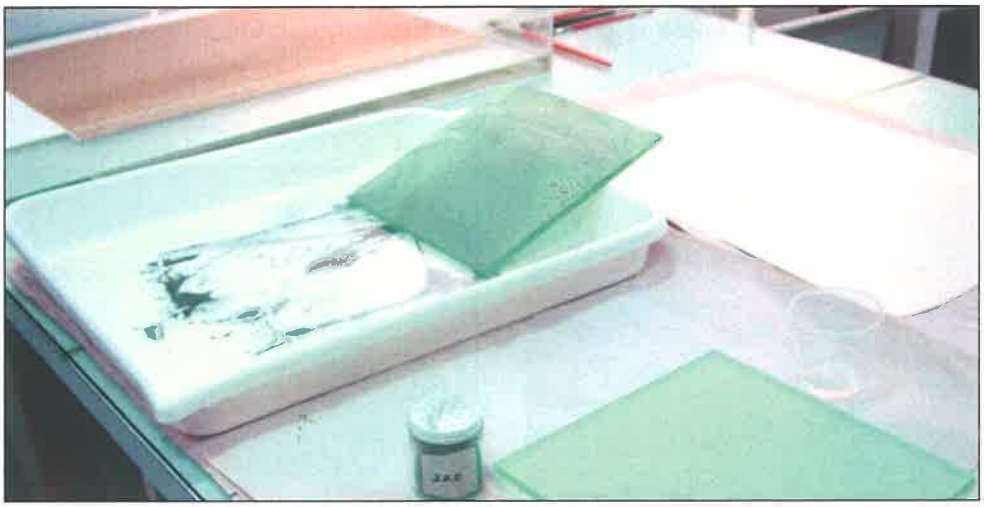


Sprinkle Carborundum on the glass surface and add a little water.

Place one piece of glass on top of the other (sandwiching the carborundum and water mix). Note! Keep track of the surfaces that are being grained.

Lean into top plate and move in circular motion. This requires pressure and time. Remember you are graining two plates. Add more carborundum and water as needed.

70Check your progress - rinse with water and hold up to the light. Concentrate your attention on the light areas and re-grain. When plates have a consistent tone you are done.



Add more water and carborundum as needed. Multiple applications are required on first graining of glass.

GRAINING GLASS

Wash with water and blot dry.

The desired effect is a smooth even tone. To maintain transparency grain one side of the plate only.

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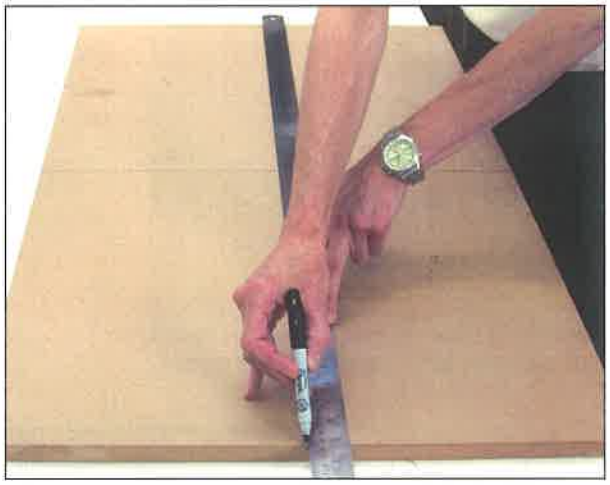
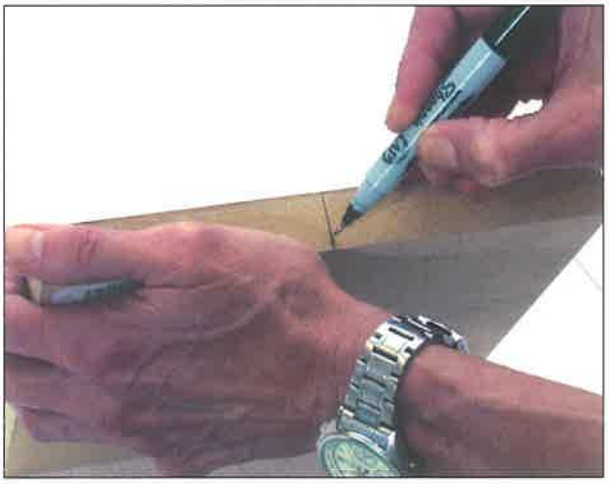
The use of a template or "furniture" for wood blocks and glass plates is a must. They are simple to make and with care will last for years. We recommend using Medium Density Fiber Board or "MDF" which is a very flat and stable product that is easy to cut. It is available in 1/4", 3/8", 1/2" and 3/4" thicknesses and can be found at most lumber yards.

Make your template as large as possible. This will allow for the biggest possible paper size and multiple paper locations. Note: While a template is generally specific to one plate size an 8" x 10" hole will also accomodate 2 - 4" x 5" plates.



The overall dimension of our template is 38" x 23".

Begin by marking center lines with an indelible marker.



Mark the center of your plate on all four sides.

Align the plate to the template as shown above.

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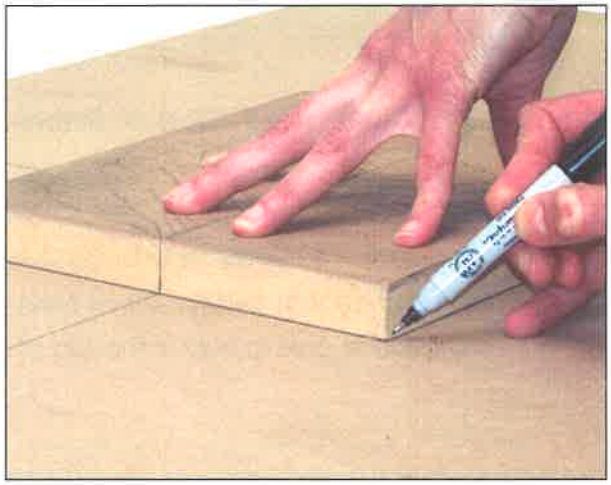
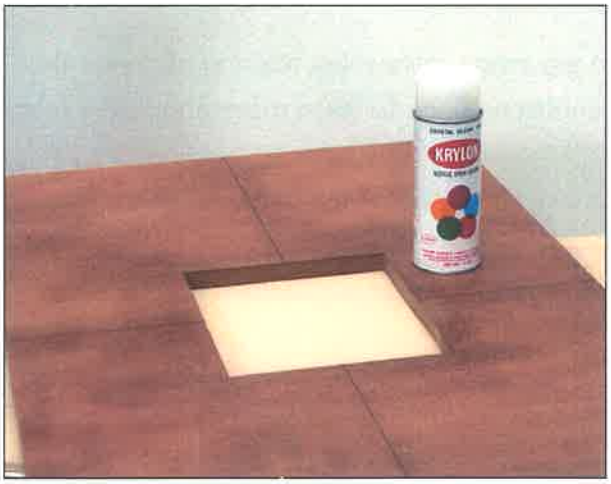
If your template material is higher than your plate use mat board shims to elevate your plate to the desired height. Templates will allow you to do multiple drops with ease. For precise registration place a pencil mark on the back of your paper corresponding to the center lines of your template.



Trace the plate to the template.

Drill a hole to accomodate the Saber Saw blade.

Cut the template along the outside of your plate line.



Seal the template with any sealer, we used Krylon Clear Spray Lacquer. Always spray out doors and wear a ventilator.

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In the following example we are drawing the image with water based materials. This is the simplest and the least toxic method to make an image. By using water soluble materials the plate can be washed out with water after the silicone coating is applied.

There are many water soluble pencils and crayons to choose from today some may have to be heat set before they become resistant to the odorless paint thinner. Note - Any material that is not affected (dissolved) by odorless paint thinner and can de dissolved in water is a good candidate for a drawing medium.

We used three water soluble pencils 1. Satbilo All 8008, 2. Staedtler Omnichrome 108-9, 3. Stabilo All 8046. All marks washed out with water.

We have used two plate materials; 3/8" glass and ball grained aluminum. The advantage to glass is that in can be re-grained and used again and again. We preferred using the smooth surface (back side) of the ball grain aluminum plate. If you are using the front make sure the silicone coat is above the top of the grain.

We printed both plates using Daniel Smith's crayon black Lithography Ink, straight out of the can.

Plate clean up was with alcohol, carefully rubbing and blotting. Ink left on plate is normal.

There are many more mark making methods than can be shown here. We urge you to research Nik Semenoff's writings to learn more about this medium.

It is our desire to cover the very basics and to inspire your further exploration.

Please share your discoveries and successes.

WATERLESS LITHOGRAPHY PROCESS DEVELOPED BY NIK SEMENOFF.
FOR COMPREHENSIVE INFORMATION GO TO HTTP://DUKE.USASK.CA/~SEMENOFF/ ON THE INTERNET.

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Important! Use clear silicone rubber from the hardware store. Use only the non-paintable type silicone. Do not use "paintable", waterbased, or Type II. Use the old standard solvent type. The thinner used is odorless paint thinner.

Add silicon to small amount of odorless paint thinner.

Mix silicon and paint thinner together. Keep mixing till you have a diluted solution.

Tip! Use a clear 35mm film case. Cap between plates. Allow silicon to dry in the film case when finished and peel from container. Container may be re-used.

MIXING

The desired consistency has no solids and runs off the knife edge.

The solution should have the consistency of light syrup.

WATERLESS LITHOGRAPHY PROCESS DEVELOPED BY NIK SEMENOFF.
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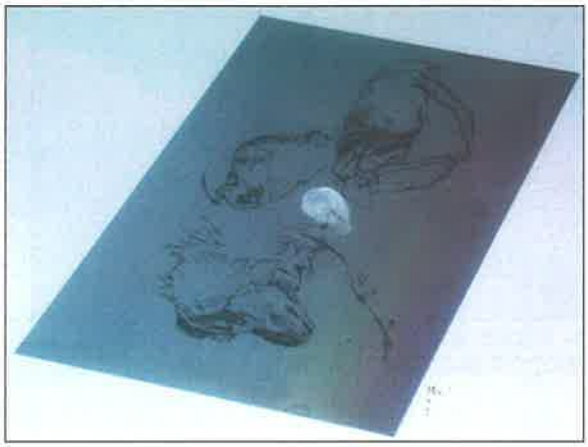
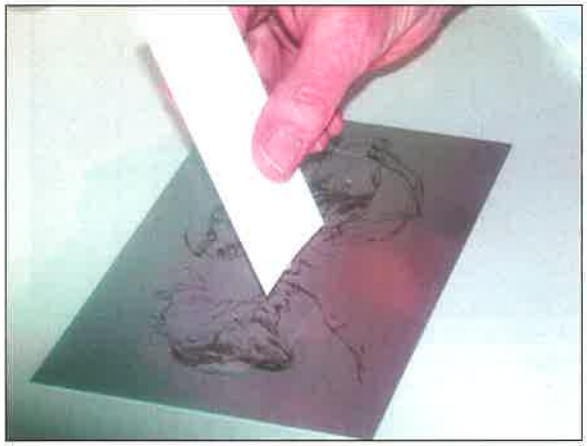
Note! Take care when spreading the silicon solution. Use light pressure to avoid removing the image. One very thin coat is needed over entire plate. An additional coat of silicon may be applied if necessary. To make a buffing ball use 1-1/2" foam rubber and lint-free paper towels (sold as Shop Towels). Wrap a sheet of towel around the foam and size to fit in your hand.

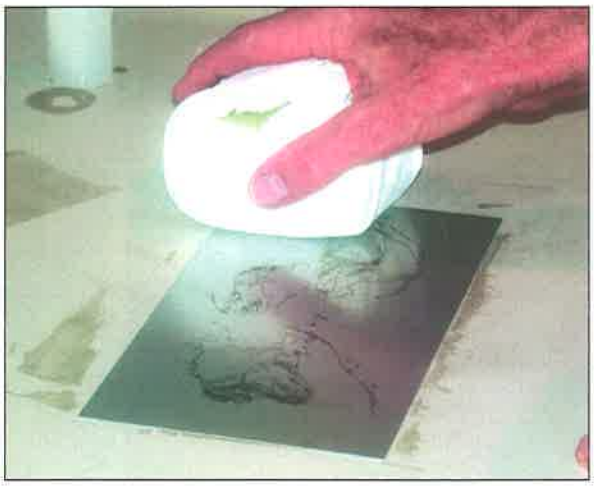
APPLYING SILICONE



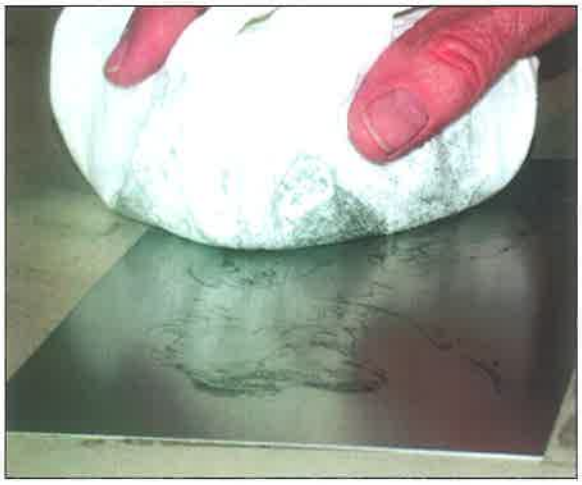
Place a small amount of silicon in the center of the plate.



Spread with a smooth piece of lightweight cardboard or suitable material.



Very lightly buff the silicon to a smooth and thin surface. Lines left in silicone will reproduce in the image.



A small amount of image transfer to the cloth is normal. Keep the cloth clean by rotating towel.

Important! After application of silicone is complete. Let dry overnight.

WATERLESS LITHOGRAPHY PROCESS DEVELOPED BY NIK SEMENOFF.
FOR COMPREHENSIVE INFORMATION GO TO HTTP://DUKE.USASK.CA/~SEMENOFF/ ON THE INTERNET.

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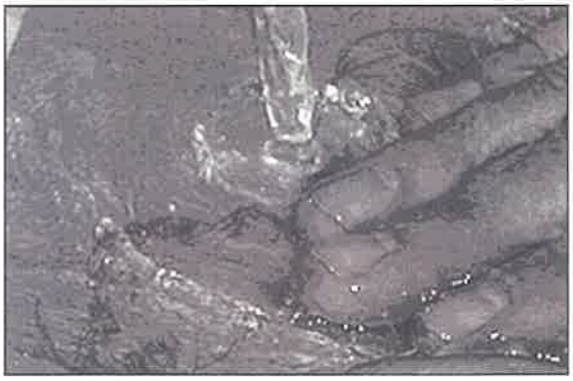
WASHING OUT

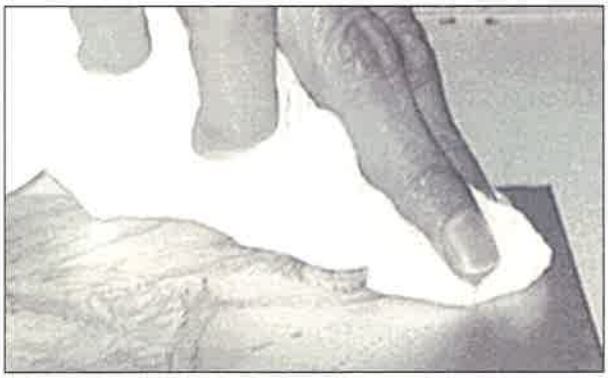
Under cold tap water, use your fingers to dissolve and lift the pencil lines.

If necessary you can use denatured alcohol to remove any silicone not re-moved with water.

Tip! You will notice the drawing material being washed away and diminishing from the plate surface. You will not completely loose the drawn image in wash out. The silicone is removed in wash out by the action of lifting the drawn image from the surface of the plate. A ghost image left behind is normal.



A light rubbing action and water cause the water soluble drawing material to lift from the plate surface.



Blotting and gently rubbing with alcohol will release more silicone and drawing material if needed. Use a soft, lint free paper towel.

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In the following example we used Daniel Smith "crayon black" lithography ink straight out of the can. Inks need to be of high viscosity, high tack and non-greasy. Daniel Smith water - soluble relief inks can be used, allowing you a water clean-up. For a less viscous ink, modify using sunflower or safflower oil.

INKING PLATE

Warm ink with knife and load roller.

Secure the plate to the inking table with tape.

Tip! Use a slow roll with pressure to load the plate. Follow your slow roll with fast rolls across entire plate surface. Do not stop your roll in the middle of the plate or change directions, this will leave a line that will require more fast rolling to lift off. When lifting off tint (fast rolls) rejuvenate roller by rolling over newsprint or phone book.

Slow roll with pressure to load plate.

Tape is visible under plate.

Fast rolls over entire plate to lift of tinting of silicon areas.

Synthetic rubber rollers work best, you may even use small rollers with great results due to the excellent repelling characteristics of the silicone. A small brayer works well along the edges to remove tinting.

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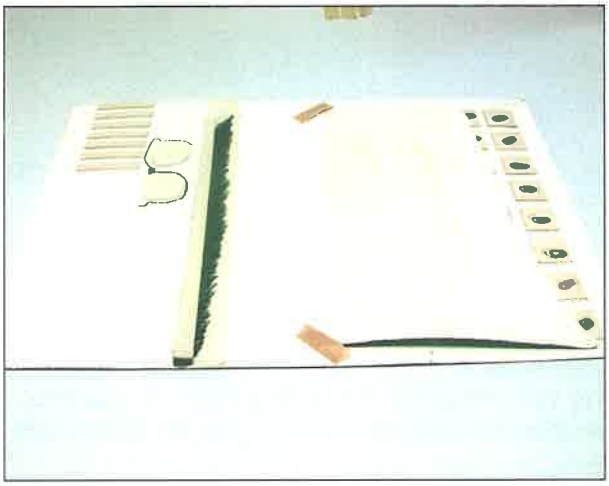
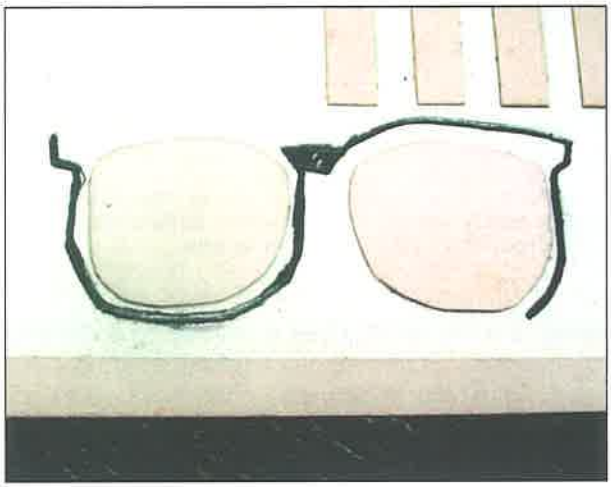
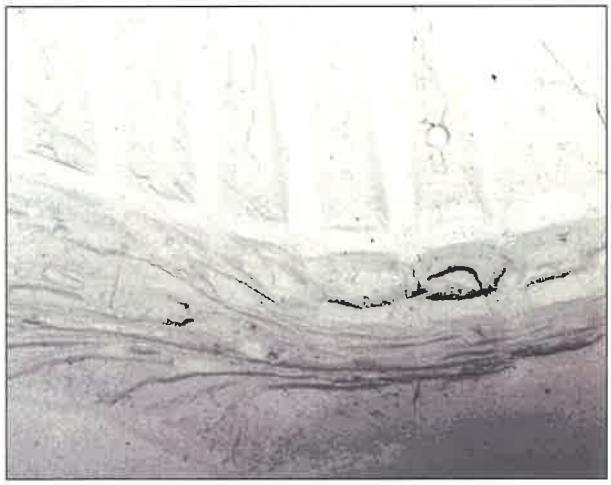
There are many methods to making collagraph plates. The following example illustrates multiple media used for embossing and graphite for color. The main considerations for plate construction are: 1. Height (depth of embossing). 2. Paper stretch.
Elements that are too thick will crease paper and not transfer ink at edges of objects.
For best results use a heavy weight paper that has been adequately soaked. Seal you plate with acrylic mat medium or other coating to prevent damage to plate and help transfer the ink to the paper.



Side view of plate.



Mat board with graphite.



Acrylic modeling paste.

Modeling paste layered over mat chips with graphite finger print.

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SCANNING 3 DIMENSIONAL OBJECTS

Carefully place objects on scanner bed. Glass top is easily scratched and once scratched will affect the quality of your scans.

Objects ready to be scanned.

Using any flatbed scanner and imaging software you can create photographic images without the use of a camera. Scanners can capture amazing detail in objects up to 2" tall. Use the imaging software to crop, adjust the brightness / contrast qualities and resize your image before printing your transparency. We recommend making your transparency slightly larger than the plate to avoid a white line at the plate edge from transparency misalignment.

Cover scanner with opaque background. Our felt sizing catcher gives a white neutral background when scanned and drapes well over the objects. Dark colors work well for white objects.

Any photographic software will work for basic photo manipulation. Match your transparency with your printer type (ink jet printers use in jet transparency, laser printers use laser transparency).

Important. This ia a black and white process. All images must be converted to grayscale for best results.

SolarPlate process developed by Dan Welden.
For comprehensive information refer to "Printmaking In The Sun" Dan Welden and Pauline Muir.

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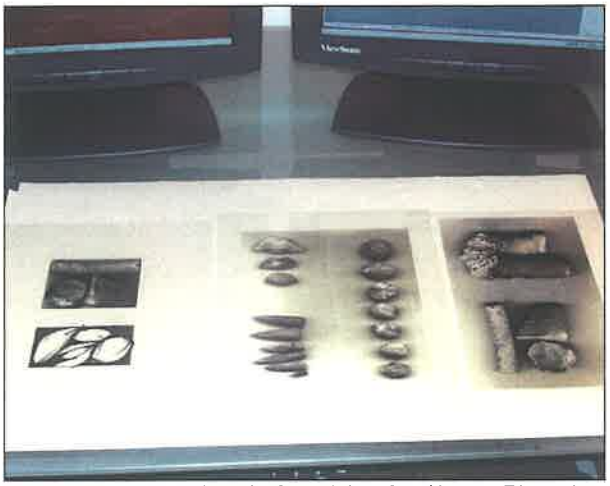
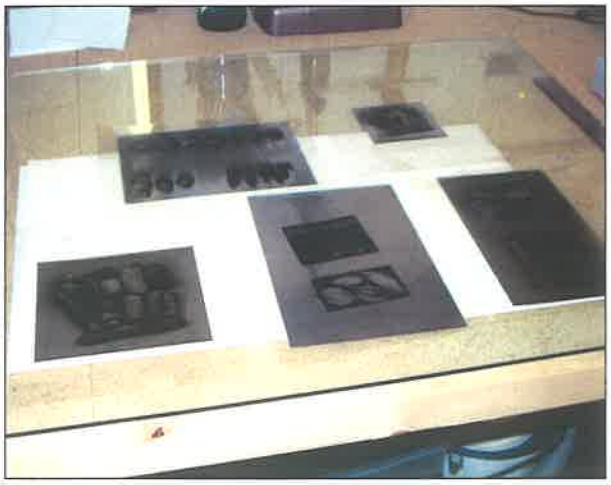
SolarPlates are a fragile material before they are exposed and hardened. Work surfaces should be kept clean and as dust-free as possible. Plates are light sensitive and should be placed face down to avoid pre-mature exposure. Cut plates indoors and avoid direct light through windows and doors.

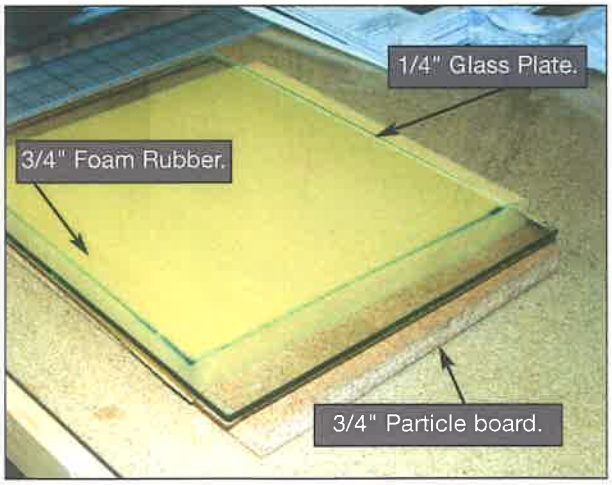


Transparencies printed after sizing for plates. Placed on clean newsprint to avoid dust.

Cut using a heavy paper shear or for best results use the Kuttrimer from Ideal paper trimmers. Cut down through the polymer surface. Wear lint free gloves to keep the plate surface clean and avoid transferring finger prints.



Plates cut and placed face down.



Contact frame made from 3/4" particle board, 3/4" foam rubber, 1/4" plate glass.

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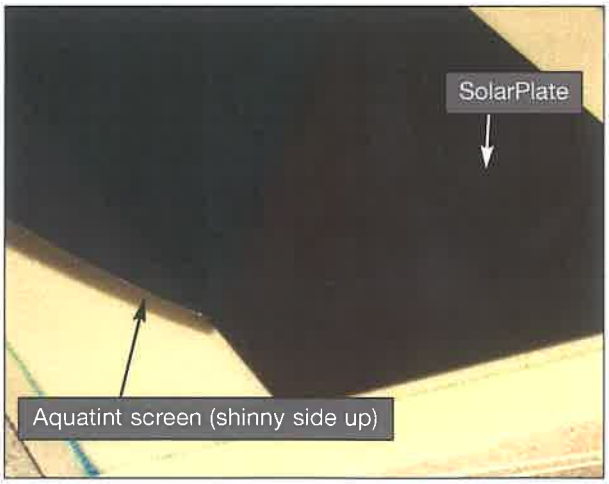
DOUBLE EXPOSING WITH AQUATINT SCREEN

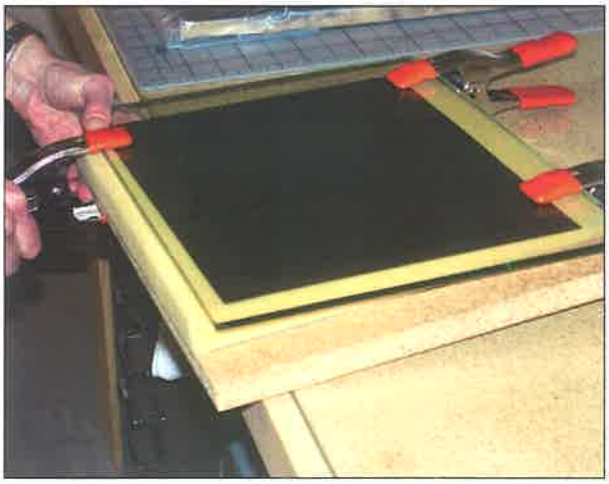
It is important to keep dust away from your transparency, glass plate and the SolarPlate surface during exposure. Dust will show up as white stars or dots in the light areas on the exposed plate and hold ink. Use of a anti-static cloth on the transparency and plate surface will help eliminate dust and the static electricity that attracts dust.

Clean glass surface and inspect for scratches.If a scratch is present locate scratch away from the plate surface.

Wipe transparency with a anti-static cloth to remove dust. Cloth may be purchased at a camera supply store.



Use a random dot pattern aquatint screen and place matte surface next to plate (shinny side up).



Clamp together using spring clamps as shown above.

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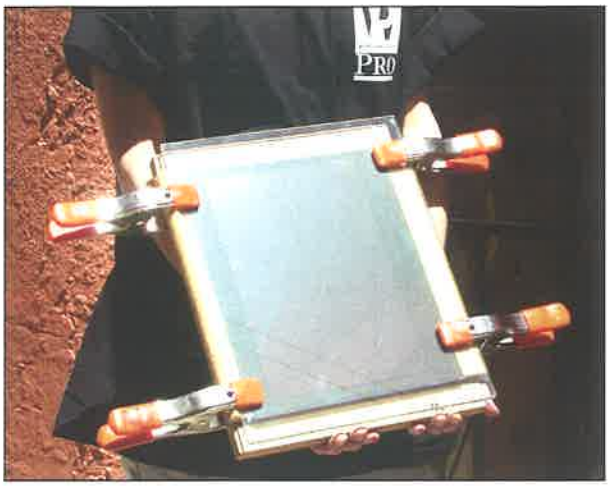
We recommend using a high quality random dot aquatint screen available from Daniel Smith Art Materials or Dan Welden at www.solarplate.com. These screens are expensive and should be cared for and properly stored. Store between rigid cardboard and flat to avoid creases. Creases can also be caused by misalignment of screen in contact frame. Whatever the cause, creases in film will appear in the image during exposure rendering the screen useless. We have used screens as along as a year before they become worn or enough polymer builds up on the screen surface reducing its effectiveness.



First exposure: 1.5 minutes. Keep contact frame and plate at right angles to the sun.

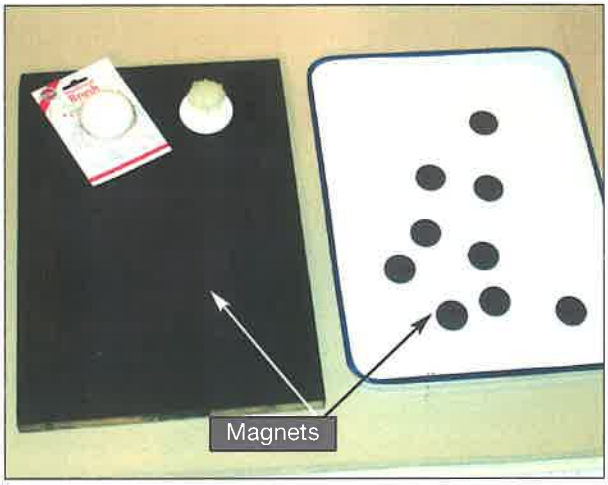
Remove aguatint screen and set aside.

Place transparency on the plate. Remember image prints in reverse so flip the transparency to read correctly when printed.

Second exposure 1.5 minutes. Slightly tilt frame from side to side during exposure - this will minimize dust and scratches from showing up in the plate.

SolarPlate has a UV light sensitive surface that hardens when exposed to sun light. For best results expose in sunny conditions with strong shadows. For example; summer exposures in Santa Fe are approximately 1.5 minutes each exposure and 2.5 minutes each exposure during winter months. Under exposed plates will be gummy and dark with excessive plate tone. Over exposed plates will have light line quality and loss of subtle gray tones. Very opaque transparencies may require longer exposure times and lighter, less opaque transparencies require less time. Use small test strips to determine best exposure times.

SolarPlates have a steel back that make the use of magnets extremely helpful for securing the plate during wash-out and inking. We recommend using an enameled steel tray available from Daniel Smith Art Materials and magnetic dots for making a wash-out tray. Make an inking board using self-adhesive vinyl magnet strips placed on a wood board. Magnets can be found at most hobby stores. A soft nylon bristle brush works best for washing the soluble polymer from the plate, while a stiff brush can scratch the plate. We recommend using a "mushroom brush" available at kitchen supply stores for small plates and a "back brush" for large plates.



Magnets are used to hold the plate in place during washout and inking.

Wash the plate with a soft nylon brush under cool water, approximately 30-45 seconds.

Blot the surface of the plate with newsprint. Be very gentle as the exposed plate has not been hardened.

Carefully remove all surface water.

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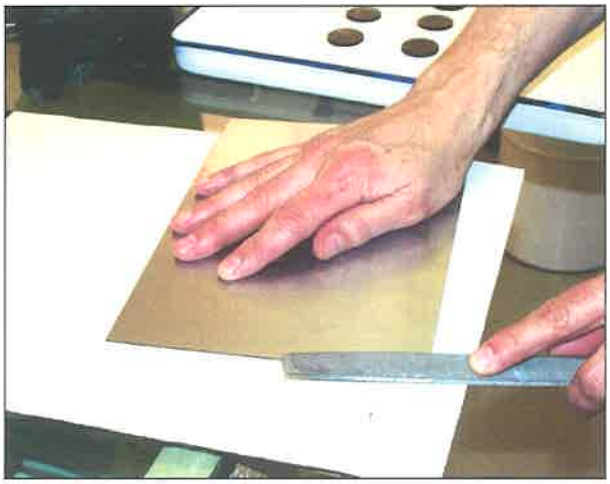
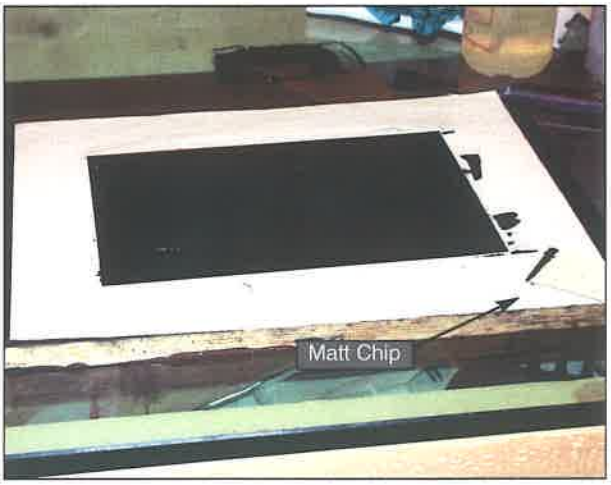
After exposing and washing out your plate you must expose the plate again to harden the surface before printing. Timing is not critical, generally 5-10 minutes in direct sun is sufficient. Touch the surface of the plate. if the plate surface feels "smooth" it is ready. If the plate surface feels "tacky" continue post exposure. You may post expose up to 1 hour or more without damaging the plate.

Leave the dry plate on the tray and place it in the sun for 5 to 10 minutes.

Touch the surface of the plate. If the plate surface feels "smooth" the plate is sufficiently hardened.



File the back edges of the plate to remove any burs.



Ink the whole surface of the plate with a piece mattboard. You can also use a plastic ink knife - do not use a metal ink knife as it will scratch the plate surface.

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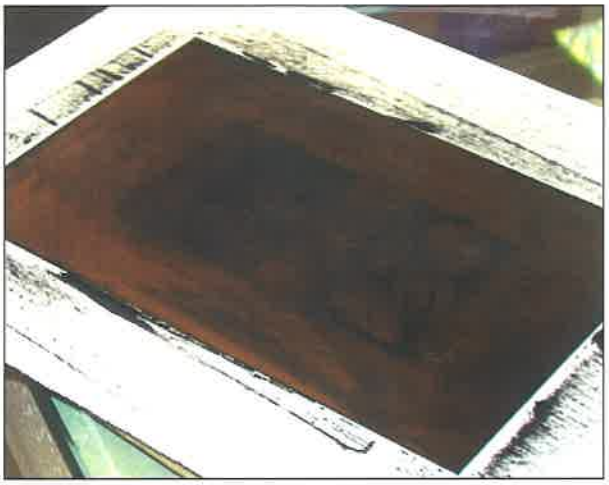
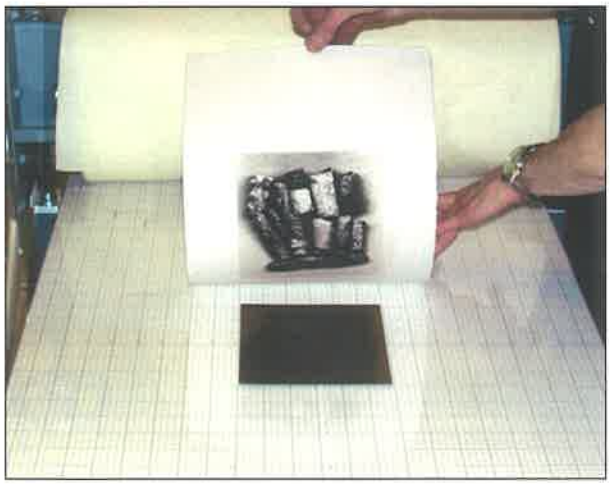
When inking an intaglio solarplate remember to press the ink into the shallow grooves of the image. When wiping the plate remember not to pull the ink up from the shallow grooves. Start with a soft tarleton to remove most of the ink. Switch to newsprint for final wiping and to polish highlights. Keep surface of the newsprint flat to the plate to avoid removing ink from inside the grooves. Avoid over conditioning your ink with Easy Wipe or similar product. These products will make your plate easier to wipe, but also make your ink more transparent thus giving you an anemic or faint image.



Wipe the plate with a soft tarlatan or cheesecloth working from the center out.

Use newsprint to final wipe. Keep newsprint flat to avoid removing ink from the grooves.

Dampen your printing paper and place newsprint between paper and felt. Newsprint will protect ink transfer to felt and keep felt from sticking to the paper.



Solarplates are thin and require pressure. Set pressure to 4.5 or greater.

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