

Printmaking World **BUILD-A-PRESS**

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Shown in unfinished
black walnut

Mini Etching Press

From the Pacific Northwest United States comes a new printmaking experience, the DIY etching press, to assemble and use right out of the box - the world's first personal sized, award-winning and functional press for four methods of printing.



Printmaking World

BUILD-A-PRESS

DIY MINI ETCHING PRESS



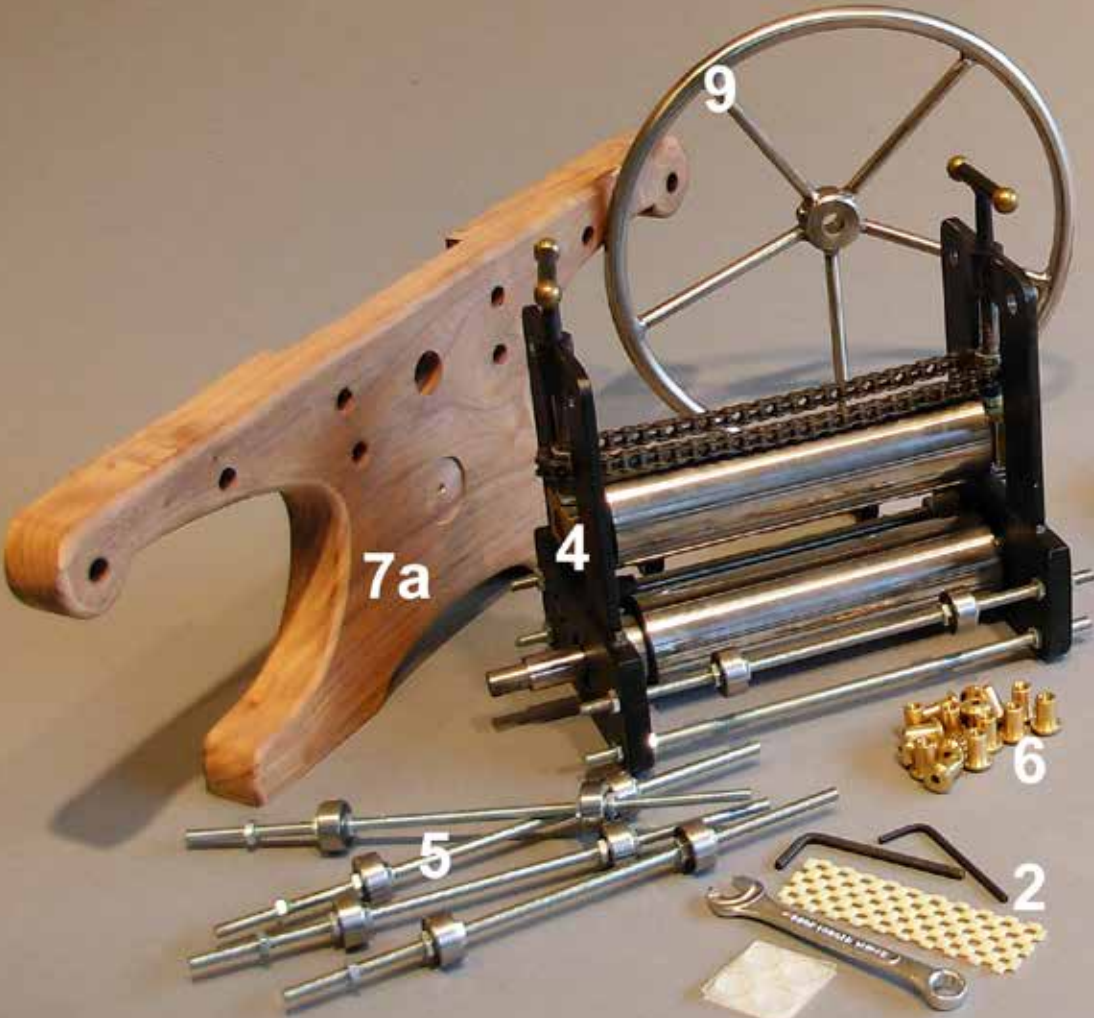
Assembled Mini Etching Press - Model MEP6 in unfinished black walnut

Assembly, care and operation of a DIY Mini Etching Press for printing small-sized plates by intaglio, relief, planograph, stencil and monoprint/monotype printing methods, including type-high blocks. Shown above is the assembled press along with accessories included in the kit - felt blankets, etched brass badges, chase and tools for assembly.



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Ritchie's Perfect Press
Division of Emerald Works
500 Aloha #105 Seattle WA 98109
ritchie@seanet.com www.printmakingworld.com



DIY MINI ETCHING PRESS

Part I

Introduction

The idea behind the Do-It-Yourself etching press is to make owning a personal etching press more fun, affordable and engaging. Someone pointed out that knowing a press inside-out makes a more knowledgeable printmaker. Doing-it-yourself brings enjoyment of making something authentic. With the finished press, the owner will certainly make authentic prints. The press has been assembled, tested and then disassembled to pack and ship.

Note that all Halfwood Presses are made from natural, selected wood with an eye toward conservation. Therefore, small knots or changes in the wood grain have been left rather than discard this valuable resource. The owner is encouraged to use his or her craftsmanship to make these natural things blend the press' finish.

The following instructions to assemble the press are in a step-by-step order and it is recommended that they be followed as such. In some instances there may be videos accessible on YouTube. More information about other presses of the Halfwood Press is available online.

Step 1 - Detailing the press' wood parts

It will function without wood finishing, which involves rasping off edges, sanding, perhaps staining and oiling. Consider embellishing with a wood burning tool or a laser engraver. Other options are varnishing, lacquering, or painting bright colors. It may be the first step, or disassemble the press later on and then finish. The round, cut insets are for the three brass badges. The badges should be glued in when they are finished. Two-part epoxy glue is the best but almost any glue will hold them because the cuts are deep so as to prevent the badges from being knocked off or pried out.



Rasp away rough edges and sand before staining or oiling, starting with coarse sandpaper, graduating to 220 or finer, and then use 000 steel wool to polish.



Boiled linseed oil is a good choice, but teak oil and tung oil give more lustre and do not need re-applying. In the illustration, no stain was used to darken the black walnut.



After the oil has sufficiently cured, then the wood can be waxed. As with oils, there are many waxes from which to choose. In this demonstration, ordinary paste wax was the choice. It must dry before buffing down with cloth. Follow the instructions on the package; more than one application might be recommended.



Inset spaces have been cut in for the three round badges. See a later page to see how the badges were made with the laser transfer method - a method that is good for making copper and brass etched printing plates, too. Two-part epoxy glue is best for keeping the badge in place. Clean the metal back with alcohol for best results.



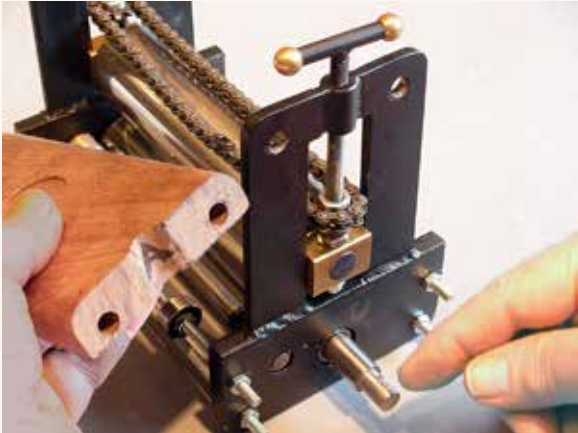
Step 2 - Attach the hood to the press core

The hood is custom-fit to the core. The Active side (wheel side) and Passive sides of the hood are indicated by the letter A and P on each end, assuring the best alignment of the holes and the barrel cap nuts. The Active end matches the side where the driving shaft (which attaches to the driving wheel) extends.

With the hood in place, insert the threaded, 1 1/2" hex socket-head screws. Using the 3/32" hex key, turn the socket head set screws in until about 1/8" inch remains visible in the recessed holes. This is for the barrel cap nuts to be attached. For the brass barrel nuts use the 1/8" hex key.



The core of the press has a hood, and it was custom fitted to the core. The length of the core is precisely correct for proper tension of the chain.



The wood hood has "Active" (A) and "Passive" (P) ends. It is milled and shaped to fit the core and is secured with four long threaded set screws and brass barrel cap nuts.



Threaded 1 1/2" long set screws go into the threaded holes of the hood to be screwed in with the 3/32" hex key until about 1/8" extends out for the brass barrel cap nuts.



Brass barrel cap nuts fit the long threaded set screws ready to be tightened with the 1/8" hex key.



Step 3 - Start the passive side piece tie rods

The passive hardwood side piece, marked P, has four unthreaded holes drilled in them to accept the four connecting tie rods, plus four holes in the middle to attach the press core. The connecting tie rods have “passive” ends, distinguished by having jam nuts which will be for adjusting it in the final steps of assembly. This end of the threaded tie rods slips through the unthreaded holes in the passive side piece. Later, brass barrel cap nuts will fit the threaded tie rods’ ends, which will protrude about 1/8” inside the holes.



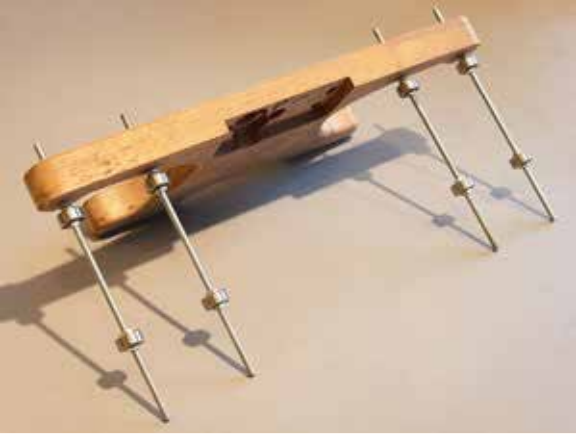
Four threaded steel cross-tie rods have “passive” ends with jam nuts (and an active end without jam nuts). These fit in the holes in both the wood side pieces.



Run the jam nuts all the way to the bearings. When assembling the two sides space is needed for the next step. When the other wood side is fitted, then this jam nut returns to within about 7/8” from the end of the rod.



On the passive wood side, which is marked with a P, insert the end of the threaded cross tie rods through the holes. The threaded rod slips in these holes freely because these are not threaded. Be sure it is the end with the jam nut (which had been run up next to the bearing, providing space).



With all 4 threaded rod cross tie rods in their holes, set the passive side piece aside. The passive side piece will be attached to the active side piece after the active side piece is secured to the core with its four brass barrel cap nuts.

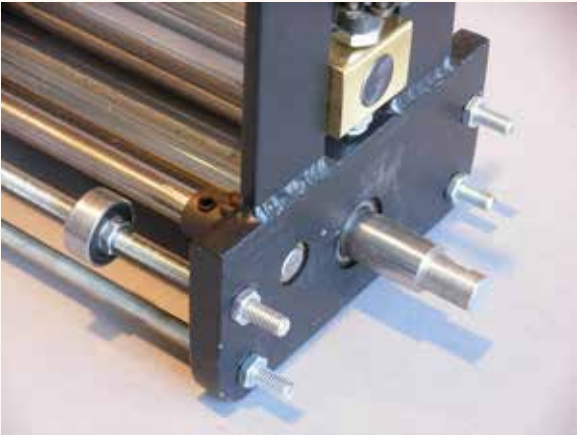


Step 4 - Attach the active side piece

The active side piece of the Mini Press core has the shaft for the driving wheel and four threaded cross tie rods protruding from side of the core about 1/2-inch.

Align the core with the wood active side piece (marked with an A). You can see that about a 1/8-inch of threaded rod shows in the 4 holes. Start the brass barrel cap nuts to hold the active side piece in place.

With all the brass barrel cap nuts in place, snug them down to the wood with the 1/8" hex key. It is not necessary to tighten them extremely.



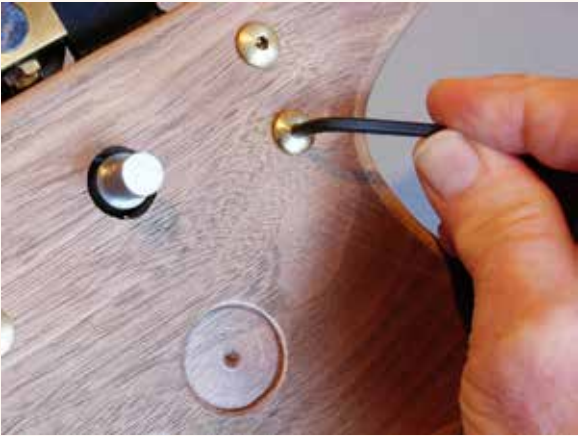
The core has four threaded cross-tie rods ends extending about 1/2". Note that they are secured with jam nuts - some both on the outside and the inside, too.



When the active side piece is on, about 1/8" can be seen which has passed into the recessed holes.



Start the brass barrel cap nuts being sure they are started straight to avoid stripping the threads. Make them finger tight.



Tighten the brass barrel cap nuts with the 1/8" hex key - only snug tight as it's not necessary to tighten them extremely.



Step 5 - Align the passive side with the core

Press the passive side piece onto the passive side of the core, whose threaded rods extend about 1/2" so when the passive wood side is on about 1/8" of the rods' ends can be seen in the holes. Start the brass barrel cap nuts and snug them down.

Slide the 4 cross ties' active ends to the threaded holes in the active side piece. Use the finger gripper to help turn the threaded rod in until they extend enough for the barrel cap nuts. Screw the jam nut of the passive side out to the wood. Finally, turn in the remaining eight brass barrel cap nuts.



With the jam nuts moved to the bearings, fit the passive side piece on the four threaded cross tie rods of the core. Start the passive side's brass barrel cap nuts.



Turn the threaded cross tie rods into the active side piece holes, which are threaded (unlike those in the passive side piece).



Turn the threaded cross tie rod until about 1/8" can be seen coming through the recessed holes. Start a brass barrel cap nut on this end, holding the threaded rod with the vinyl finger gripper so it doesn't turn with the brass barrel nut.



Turn the jam nuts back out to the wood and secure the cap nut and jam nut together. The space between the two wood side pieces should measure a little over 6" - where the press bed will fit. There will be steps for final adjustment of this space in the finished press.



Step 6 - Tighten cap and jam nuts on passive side

The cap nuts need only be snug when attaching the hood and side pieces - not super-tight. The brass barrel cap nuts are of a comparatively hard metal, but do not use excessive force when tightening them with the 1/8" hex key; and use only a hex key that's in new condition - never a worn-out one for the cap nuts.

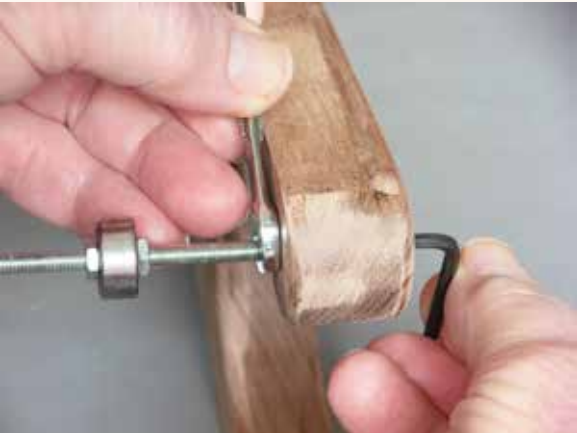
The jam nuts that will touch up to the wood side pieces, located inside the passive side, should be snug against the wood. The purpose of these jam nuts is to keep the outer cap nut of the passive side tight against the wood. Use the 5/16" open end wrench for tightening the inside jam nuts. The jam nuts on the steel core may be re-checked for tightness but they were correctly set at the factory.



Use the 1/8" hex key provided for tightening the brass barrel nuts..



Turn the jam nuts in the passive side to snug against the wood. Use the vinyl finger gripper pad to help hold the threaded rod and prevent its turning.



The 5/16 open-end wrench fits the jam nuts and the 1/8" hex key is used on the brass barrel nut - the two are worked together to secure the passive side.



Jam nuts inside the steel core and on the passive side piece determine the slightly wider than 6" space for the bed. Jam nuts in the core should not need to be changed as they were set at the factory.



Step 7 - Check driving shaft set screw

There are two set screws on the spur gear and one on the retainer collar, a total of three set screws on the drive shaft which were tightened at the factory. Be familiar with these to ensure that they are always tight. If the spur gear set screws loosen, the gear may slip on the shaft. Use the 3/32" hex key to check the set screws for tightness.

The photos below show the internal design of the set screws, how they are seated on the shaft, and the position of the aluminum retainer collar.



The spur gear has two set screws which are made of hardened steel, and the shaft has two “dimples” drilled in it where the set screws are seated.



The set screws on the spur gear were tightend at the factory and do not require the user to do this, but checking tightness with the 3/32 hex key is a good idea.



The aluminum retaining collar, located on the passive end of the driving shaft, is shown with the set screw loosened to point out it has only one set screw and no dimple on the shaft like those for the spur gear.



The retaining collar has the simple purpose of keeping the driving shaft in the exact position it was when the core was assembled, and should never need attention. It's shown here only for the user's edification.

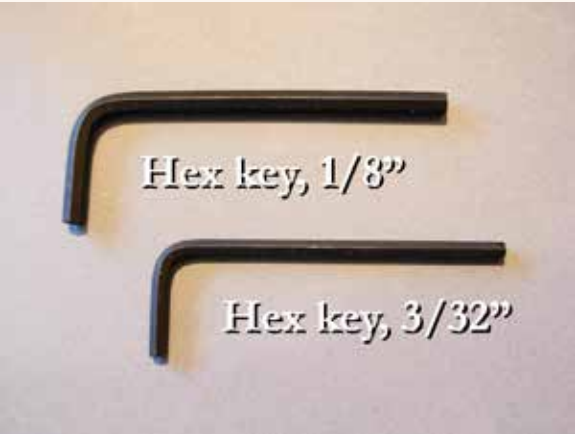


Step 8 - Attach the wheel, tighten set screw

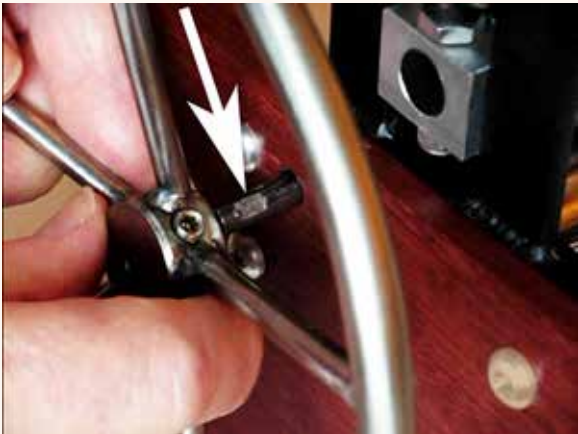
The wheel is stainless steel with a 1/4" set screw in the hub. The 1/8" Allen wrench provided is for tightening the set screw. When attaching the wheel, note that there is a flat spot filed into the shaft - the exact spot where the set screw is to be seated. This ensures that the driving wheel hub will not slip on the shaft when the wheel is turned while printing.

When tightening the set screw, never use a hex key that shows wear. If a hex key slips, then the edges inside the set screw wear and the set screw cannot be loosened to remove it, nor can it be tightened to prevent the wheel from slipping.

The wheel is hand-welded, so if it appears to wobble when you spin the wheel free and fast, don't worry - this does not affect the press' performance.



Of the two hex keys included, the larger one is 1/8" and is used for tightening the set screw on the wheel hub.



A flat spot has been filed on the shaft as the exact place to seat the set screw, ensuring that the wheel hub will not slip.



With the set screw loose so it won't catch on the shaft end, align it with the shaft's flat spot and press it on far enough that the set screw will settle on that spot.



The 1/8" hex key is for tightening the set screw, setting it well into the flat spot so it "bites" into the steel and won't loosen. Check it occasionally to be sure it stays tight.



Step 9 - Re-covering press bed - an option

The bed is 3/8" thick polycarbonate, often called Lexan - its original trademark name. As it comes from the supplier, it is cut, routed, milled and drilled and fitted with a steel rack and safety stops. The corners are rounded for appearance and the edges are chamfered. Clear vinyl self-adhesive contact paper is applied to protect the top surface.

If not wanted, then the vinyl can be peeled off by warming with a hand iron. The steps shown here are the way the vinyl covering was applied. Tools used were files, utility knife, shipping tape, squeegee, ruler, cutting surface and a bench stop. The safety stops were removed with the 1/8" hex key so that the bed lies flat.



Filing corners and edges of a new bed, as its done at the factory, because they were sharp when newly cut from sheets.



When measuring and cutting new covering, allow extra on the sides and ends.



With one end against a stop, tape the covering on the other end to the tabletop with the contact paper reading-side down. Turn back the vinyl, and start to peel the backing away about two inches. With two hands, press and drag the squeegee and peel at the same time all the way to the end of the bed.



A window-washer-style squeegee is ideal to help avoid bubbles. If bubbles are trapped, make a tiny hole in the bubble and press out the trapped air. Trim the excess all around the bed.

Step 10 - Tuning and adjusting the press

Thinking of a press as being an instrument is like thinking of a musician's—to the visual artist who makes prints, the printing press is what a guitar is to a musician. Fine tuning factors include the feel of the pressure screws and the movement of the bed.

Again, the hex key and wrench are essential to this fine adjustment. If anything has changed while the press was going together, now is the time to go over the assembled press to see that it works as well as it was designed to work.



The space between the bed and the side piece needs to be only enough to allow free movement. In the photo, a business card fits in the space between side piece and bed.



The chain should not be taught, but slightly loose or else the pressure screws will be hard to turn or jerky feeling. The adjustment was made correctly at the factory.



Brass barrel cap nuts fit the threaded screws and are tightened with the 1/8" hex key included with the press. Do not use great force on cap nuts - merely make them snug against the wood.



The open end of the 5/16" combination wrench fits the jam nuts on the threaded rod cross-ties on the passive side of the press. The jam nut allows fine adjustment of the space between the bed and the wood side piece - working in union with the brass barrel cap nut on the outside of the wood..



Making brass badges

The Halfwood Press Line has various decorative badges and there are cuts in the sides and hood of the Mini Etching Press for three. They are etched in 22-gauge brass, .025 thickness. The design is created by computer, printed in black on PCB Circuit Board Thermal Transfer paper and heat-transferred and fused on the brass by reheating it over a hot plate. Fused laser toner resists most etchants. The brass is back-coated and then immersed in ferric chloride, an acidic etchant which attacks the exposed metal. The toner is removed and the brass is trimmed the edges filed and polished so that the badges fit the cut insets. It's ready to be glued in place with 2-part epoxy cement or double-sided adhesive tape.



Design, invert and print with B&W laser toner on silicon-coated paper. The print goes toner-side on degreased brass and then transferred with a hot laminator.



As the toner is fused to the brass, the toner becomes slightly satin in appearance, forming a durable resist to etchants. Open areas are stopped out to conserve etchant, and the plate is backed with shipping tape.



Etching is with ferric chloride or Edinburgh Etch with the plate on edge or upside-down, or with constant agitation. In another step, aquatint can be added in larger open areas for texture to trap and hold blackening.

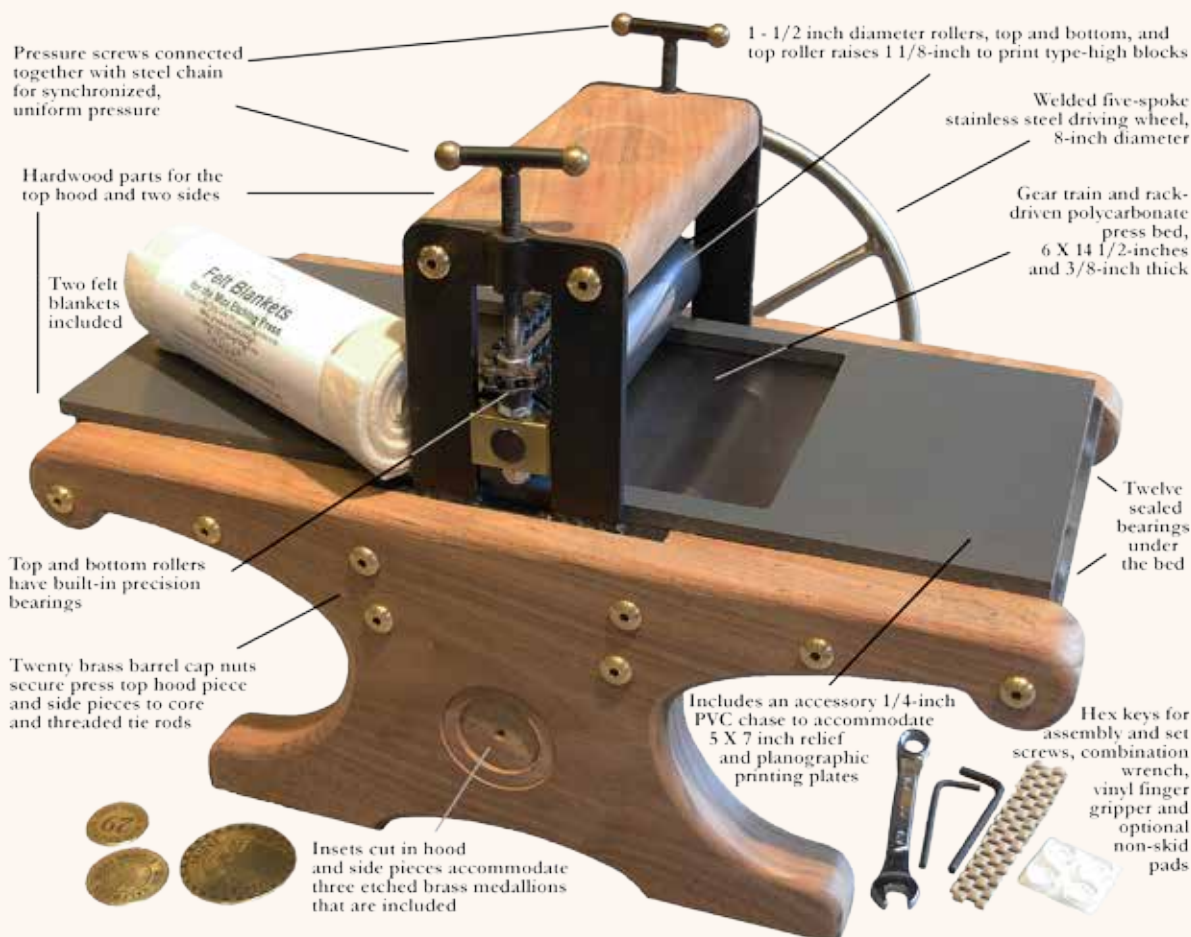


After trimming, filing and fitting to the insets, the toner is dissolved, venting away toxic fumes. The clean, polished badge design is filled with etching ink, then the back is cleaned and glued in with 2-part epoxy.

This completes the instructions for assembling the DIY model of the Mini Etching Press. Part II provides aspects of the press that were mentioned in Part I, but with expanded information such as maintaining and using the press for printmaking, uses of the chase, and added resources.

Mini Etching Press User Manual - Part II

Photographs may appear different in different versions because models finished in different ways and labels and positions are subject to change from time to time without notice.



Press Bed

The rack-driven bed is a polycarbonate measuring 3/8" thick, 6" wide and 14 1/2" long. For service and protection it was covered with self-adhesive vinyl contact paper. It may be removed by slightly warming it with an iron and peeling. Fine scratches or abrasion of the surface with use will not affect printing.

Chase

The chase is a 1/4" PVC frame cut to hold any 5 X 7-inch printing plate 1/4" thick. Use it with linoleum mounted on 1/8" backing, for example, or quarter-inch veneer wood. It also can be used for glass vitreography using a 1/4-inch plate glass with a ground surface (like grinding a lithograph stone).

Bottom roller

The bottom roller (not visible in the picture) is 1 1/2" diameter and rolls on sealed bearings that never need lubrication.

Felt Blankets

Two felt blankets come with the Mini Etching Press. One is the 1/8" thick woven pusher blanket and lays over the thinner, 1/16" thick sizing catcher. The purpose of the pusher is to

reach ink in texture and lines of images. The thin sizing catcher blanket absorbs moisture and, in some papers, sizing that is squeezed from the damp paper under pressure.

Hood

The hood is a fitted wood covering crossing the top of the press. It a convenient place to fold the blankets back, out of the way when placing the plate and papers on the press bed.

Pressure screws

Two pressure screws press the top roller down for printing, and raise the roller to loosen them. Turn the pressure screw handles clockwise to increase pressure. A synchronizing chain connects the two pressure screws, but you should always use both hands when turning the screws tightly.

Change gear and rack-driven bed

The 8-inch driving wheel drives a change gear drive system on the steel core, which then drives a spur gear engaging the rack on the underside of the bed, effecting an approximate 6:1 mechanical advantage for easier printing.

Hardwood side pieces (active, passive)

The side plates are made of hardwood and attach to the press with eight brass barrel cap nuts, supporting the press high enough for operating the wheel.

Tie rods

Four tie rods connect the two wooden side plates; and they also support the press bed on 12 roller bearings. Four more long threaded rods connect the steel side plates, forming a rigid case - the roller core - and serve to set the right tension on the synchronizing chain.

Rollers (top and bottom)

Top and bottom rollers are 1 1/2" steel on roller bearings. Synchronized pressure screws raise the top roller. The synchronizing chain keeps the top roller level, assuring uniform printing pressure across the width of the plate.

Wheel and wheel hub set screw, hex key(s)

The 8" stainless steel wheel drives the gear chain system and driving shaft. A spur gear meshes with the bed's rack gear. The wheel hub has a 1/4" set screw in it that is seated in a flat spot in the shaft. This set screw must be kept tight or else the wheel can slip. A 1/8-inch hex key is included. Never use worn hex keys.

Mini Etching Press 1/8" hex key - larger one

The driving wheel set screw on the hub of the driving wheel is easy to see, shown in the illustration with the 1/8" hex key in place. Turn the set screw clockwise to tighten.



Two hex keys are included. The larger is for the wheel hub (also for brass barrel cap nuts). The 3/32" size is for screws in the hood and tightening of the spur gear.



The illustration shows the larger, 1/8" hex key in the set screw on the driving wheel. The set screw was aligned with a flat place on the shaft.

Mini Etching Press 3/32" hex key - smaller one

With the bed out of the way, the two set screws on the spur gear are visible. Two set screws on the spur gear ensure there will be no slippage of the driving shaft. The tightness of the set screws on the spur gear is very important. It is good to check them at intervals according to how long the press has been in service.

The illustration shows only one set screw visible in its place on the spur gear, but note that there are two set screws set in this gear. Use the 3/32" hex key to check and tighten them. Turn clockwise to tighten. The other end of the shaft is a collar which is held in place with one set screw. Use the 3/32" hex key on the retaining collar.



The left illustration shows the 3/32 hex key fitted in one of the two set screws in the spur gear to check that the set screw has not worked loose during long usage of the press. Check both set screws on the spur gear to be sure they are tight.



The illustration on the right shows the 3/32" hex key set in the retaining collar on the end of the shaft. It is less likely to work loose, but it should be checked also.

Never use worn hex keys

Hex keys that are worn, with their corners rounded, must be discarded. Never use them if you see the edges are rounded over. They slip inside the socket and then the socket's inside will be rounded, too. Then the setscrew has to be removed with special tools and this is costly. If in doubt, replace the hex key with a new one. They are available at most hardware stores. Be sure to specify inch, not metric, hex key size.

When printing, if the bed moves but the blankets and plate do not, it may be that the top roller has been lowered too far for the thickness of the plate and blanket(s) being used. A plate with too little or no bevel on its edges will not allow the roller to climb up the edge of the plate, and therefore cause slippage.

A damp piece of newsprint under the printing plate helps stop slipping. This is a good idea especially if you removed the temporary plastic cover from the bed and exposed the new glossy, polished surface of the polycarbonate press bed. The damp paper puts the brake on plates that tend to skid.

With practice, the printmaker will be able to determine the various settings of the roller adjustment screws for the particular plate and blanket combination.

Pressure settings for printing

The press is designed to produce prints from plates in thickness from .025" to 1". Thick intaglio plates present challenges. Never tighten the pressure screws so much that the resistance of the wheel is so strong that it can damage the shaft or related parts.

Cleaning

The press bed may need cleaning after printing a plate if the plate had ink or dirt on its underside when it went on the bed. The bed may become scratched over time with repeated printing and cleaning, but this does not affect its performance. If a “like new” bed is desired, put paper, self-adhesive vinyl or thin metal on the bed to protect it when printing.

Covering issue

The polycarbonate press bed is tough and strong, but not scratch-resistant. Long use will dull the polish, so it comes with a self adhesive vinyl coating to save the original finish.

If a plate skids and wrinkles the vinyl, there is no harm except if a plate is placed on a bad wrinkle, in which case the pressure might cause the crease to disfigure the plate. If a wrinkle presents a problem, remove the vinyl by warming it and peeling it off. Sticky adhesive that might remain will usually come off with odorless mineral spirits. Do not use other solvents as they might eat into the polycarbonate bed. The bed may then be re-covered with new vinyl.

Lubrication

The bearings inside each of the rollers are sealed. The bed moves on the 12 more tiny sealed bearings on the threaded rods. None of these require lubrication. The pressure screws may benefit with a drop of oil on their threads, but rarely - and too much oil is worse than none. The chain never needs oil.

Wood care

The wood parts of the press’ sides are crafted in various hardwoods that, if purchased as a pre-finished press, require no care. If they were finished with teak or tung oil, one may want to use furniture polish.

Limit leverage to reasonable degree

The Mini Etching Press is strong enough for printing normal plates. People have been known to go to extremes, however, including putting too much mechanical stress on the wheel with extra leverage. Do not use so much force that it takes extra leverage to turn the wheel. Doing this may break gear teeth, bend the shaft, or warp the wheel. Never use an extra lever, such as a bar, to force the wheel.

Wheel hub set screw

When meeting with strong resistance when printing, it can be because the pressure screws are too tight for the thickness of the plate and paper. When the printing plate is too thick and not well-beveled, the set screws in the driving system may slip. Try using less pressure, working up the pressure you need to print.

Hex keys (also known as Allen wrenches)

Two sizes of hex keys are included to keep the press’ setscrews tight or to tighten them. If, when printing, a slippage problem is encountered, then the operator is probably exceeding the safety limits of the press. Maybe the intaglio printing plates may need more beveling, or they are too thick for the pressure setting.

It has happened on rare occasions that the two set screws on the spur gear of the driving shaft worked loose. The smaller hex key (3/32”) is for the two set screws on the spur gear on the driving shaft. It’s also for the retaining collar on the driving shaft, located on the passive side, under the bed, but the collar does not slip - there is no force on it.

The bed must be moved all the way back, or removed, to get access to these set screws. The 3/32” hex key is included to check the set screws periodically to be sure that they have not worked loose after long use of the press.

It’s also possible that the single set screw on the wheel hub has loosened, for which the 1/8” hex key is provided so it can be checked periodically and tightened if needed.

Four ways of printing

The Mini Etching Press is capable of printing all four printing processes, alone or in combination, plus monoprints and monotypes, too. These presses were designed to serve mainly as an etching press for intaglio printmaking, and the designer made over a hundred videos to demonstrate printing. What follows are general comments about printing intaglio, uses of the chase for relief and planographic printing, and stencil (pochoir) printing.

Printing intaglio

The Mini Etching press is designed to serve mainly for intaglio printing. Plates for intaglio printing are usually metal, plastic, wood, linoleum, glass, paper or a collage of different materials (collagraph). Polymer plates are for photo etching - the most widely used are Solar Plate and ImageOn.

If you have no experience in making a plate for printing intaglio, look on YouTube or use books about intaglio plate making. The preferred thin plate for traditional etching is 22-gauge (.025”) copper or brass, etched with ferric chloride or Edinburgh Etch. Aluminum is suitable for drypoint.

It is customary to ink with intaglio ink and then wipe the excess off with paper or a non-absorbent fabric such as tarlatan, then finish with clean paper and the heel of the hand. YouTube videos show how in great detail.



Intaglio ink is thickly applied and then wiped off clean, leaving incised lines and textures filled so that, when the plate is run through the heavy pressure of a press' rollers, the ink transfers to softened paper.

Video shorts: *Printing the Intaglio Way* - 12 one-minute videos by Bill Ritchie



In this **silent version** with subtitles only, Bill Ritchie shows how he prints the intaglio way in 12 minutes. Intaglio is the most common way etchings are printed by hand. He uses a replica of a Rembrandt etching plate (much enlarged) and in one-minute steps he prepares paper, press and the plate. Following cleanup, he dries, mats and frames his “masterpiece.” See below for sound version.



Scan to see this video or key in your browser:
<https://youtu.be/T2r1hXWwp6A>



Forty-five second introduction to Bill Ritchie's 12-step, *Print the Intaglio Way*, free on YouTube. Bill tells how he will use a copper plate he etched which he based on a Rembrandt self-portrait for this demonstration. He prints on a Mini Etching Press which he designed and sells as a kit out of his Mini Art Gallery in Seattle.



Scan to see this video or key in your browser:
<https://youtu.be/trnvJi8VinM>



Preparing the paper is first in twelve, 1-minute installments from Bill Ritchie. In step 1 he shows how to prepare two kinds of paper for printing a copper etching the intaglio way. One paper is the printing paper itself - in this example it is Arches Cover; the other is a throwaway newsprint to keep the plate in place on his Mini Etching Press bed.



Scan to see this video or key in your browser:
<https://youtu.be/ln3y2YoV-Ek>



Setting up the press comes before loading the etched, inked and wiped printing plate on the press bed. This is the second step of Bill Ritchie's 12-step, "Print the Intaglio Way." Bill uses the Mini Etching Press he designed and sells as a kit from his Seattle shop and Mini Art Gallery. Load the press comes later on in the 6th step in this series.



Scan to see this video
or key in your browser:
https://youtu.be/_MEfdDOLiNo



In this 1-minute video Bill Ritchie shows how to prepare etching ink in this, the third of his 12-step, "Print the Intaglio Way" online demonstration. Bill uses oil-based ink, but the same general process applies to other inks for intaglio printing, including the newer water wash-up inks that have come available.



Scan to see this video
or key in your browser:
https://youtu.be/_FMV-JEbdISQ



Bill Ritchie applies etching ink to a plate in this the fourth of twelve installments of "Print the Intaglio Way." Produced as an introduction for an online class introducing beginning intaglio printing, he left out plate making as it's a separate process. For this demonstration Bill made a copperplate etching by copying a Rembrandt self-portrait.



Scan to see this video
or key in your browser:
https://youtu.be/_U-IM-j_5vuDg



Wiping the copper etching plate for intaglio printing is the fifth of Bill Ritchie's twelve, one-minute installments from his experiment for an online class concept to go with his hand printmaking presses, he calls "Halfwoods." Bill demonstrates the traditional plate-wiping method using tarlatan and paper for his copper plate etching.



Scan to see this video
or key in your browser:
<https://youtu.be/weRC9fVMTiE>



Bill Ritchie shows how he loads his etching press. In other words, how he arranges the felt blankets, estimates the right pressure setting, and places his two kinds of papers and plate on the press bed. It is the 6th installment of his 12-step, "Print the Intaglio Way" demonstration using his Mini Etching press.



Scan to see this video
or key in your browser:
<https://youtu.be/ojAwoAEmqPY>



Watch the typical way of printing a plate prepared and inked for intaglio printing in this the seventh of twelve, 1-minute installments of Bill Ritchie's 12-step, "Print the Intaglio Way." This is his experiment, a sample for a printmaking class he conceived for a college-level online course in intaglio printing using a Mini Etching Press.



Scan to see this video
or key in your browser:
<https://youtu.be/nSdMNZtPkX8>



Bill explains his “moment number” practice of signing a new print in this one-minute installment in his experiment in using the Internet to present a micro-course on intaglio printing. To Bill, the moment number is more informative because it logs the minute the print was pulled and, with the printer’s GPS coordinates, the place.



Scan to see this video or key in your browser: <https://youtu.be/-eMGI-jghly4>



Pulling a print, called a “proof,” is the subject of the ninth of twelve, 1-minute installments in Bill Ritchie’s “Print the Intaglio Way.” Bill, a former professor of printmaking, experiments with video shorts for his online, college-level MOOC concept. He makes monoprints from his copper and brass plates, enjoying each one he proofs.



Scan to see this video or key in your browser: <https://youtu.be/mgnU-9A9wKqA>



The printer either prints again - repeating inking and wiping the plate - or cleans the plate with solvents such as vegetable oil or, if the ink is water-washable, soap and water. In developing an open, online class concept on intaglio printing, this is tenth of video shorts of Bill Ritchie’s 12-step, “Print the Intaglio Way” offering.



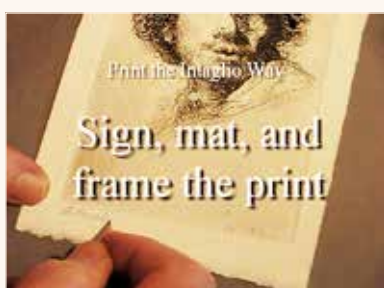
Scan to see this video or key in your browser: https://youtu.be/RF-nlj_fEz0k



Bill Ritchie demonstrates one simple way to dry the print he finished in the previous ten one-minute installments of “Print the Intaglio Way.” This is eleven of twelve of Bill Ritchie’s 12-steps. It’s his experiment in developing short videos for teaching printmaking online, this one for an open course on intaglio printing.



Scan to see this video or key in your browser: <https://youtu.be/L1B-vQF89Xgs>



“Print the Intaglio Way,” is an experiment using technology to create a college level printmaking course on printing etchings, engravings, and dry point plates (and similar methods) by the intaglio method. Bill Ritchie copied a Rembrandt etching on copper, to print on his Mini Etching Press. In this twelfth video short, he frames the print.



Scan to see this video or key in your browser: <https://youtu.be/BU-fa4u5rwzY>



In this **complete version** (without subtitles) Bill Ritchie teaches how he prints the intaglio way in 12 minutes. Intaglio is the most common way etchings are printed by hand. He uses a replica of a Rembrandt etching plate (much enlarged) and in one-minute steps he prepares paper, press and the plate. Following cleanup, he dries, mats and frames his demonstration “masterpiece.”



Scan to see this video or key in your browser: <https://youtu.be/V3v1KLITVHk>

Felt blankets

The DIY Mini Etching press comes with two felts. One is 1/8" thick and has a visible woven fiber in it; it is called the *pusher felt* or *roller blanket*. The second, which goes next to the printing paper, is 1/16" thick. It is softer, and called the *sizing catcher*. The felt blankets are cut to fit the Mini Etching Press 6"-wide bed.

It helps if the two felts are stair-stepped to start with. Slip them under the roller and tighten the pressure screws down with two hands. The screws are synchronized, linked with chain, but use two hands as the pressure increases. The chain is strong steel, but should not be stressed by using only one hand on one pressure screw.

Adjusting the pressure screws

With both hands tightening the pressure, count half-turns so that with practice the best pressure according to plate and paper thickness which is gained by experience.

The resistance during printing gives the idea how tight to make the pressure. Operation provides the feel for this with practice, and it depends on how thick the printing plate and paper are. The thicker the plate and the paper, the more space needed between the roller and the bed.

Pressure will also be affected by the width the printing plate. The test plate in the illustrations was made 5 inches on the narrow dimension to make use of most of press bed. Compare this to a plate that is only two inches wide. It will feel like less pressure but print as well.

Placement of felt blankets and the paper

The felt blankets and pressure are ready, and in the photo the paper edge is under the roller, too. The felts are folded back over the hood. A piece of damp newsprint (slightly larger than the plate) placed under the printing plate helps keep the bed clean (there may be ink on the back of the plate) and the plate is less likely to slip on damp paper.

Good practices printing

It is best to print from the left to the right when facing the active side of the press. With one end of the felts under the roller and the pressure screws tightened down, fold the felts back over the hood to give enough room to place the plate and paper. Then put the felts over the paper and slowly turn the wheel. There will be resistance met when the plate reaches the paper, and even more when reaching the edge of the plate.

If it stops here, and the wheel can't be turned, then the pressure screws are too tight; or, the plate has not been beveled enough to let the roller up over the edge. A thin, damp piece of paper, such as newsprint greatly reduces the problem of skidding.

As you continue turning the wheel, try not to stop. A pause can make a line wheel the pressure rested. When the roller comes to the end of the plate the resistance gives way. The roller can be felt to drop off the end of the plate and paper's edges. Gently pull the print off the plate, called, *pulling the proof*, or *proving* what was on the plate.

Another good practice is, instead of pulling the proof after once through, it can be run through two times, going in the reverse. Such may even get a better proof by running it through twice. Long plates, however, such as 10 inches, may blur because damp printing paper stretches, and shifts out of register if printed twice.



Turn the pressure screws clock-wise to tighten. The illustration shows the felt blankets are under the roller while setting the pressure, using two hands so the chain is not stressed. It is best to load the press with the bed out to the left (facing the wheel, active side of the press) unlike the photo above where the bed is extended to the user's right, the wrong way.



Put a piece of damp newsprint under the plate first, then put the plate on this damp paper so it is less likely to slide or be "bull-dozed" ahead of the roller.



A damp piece of newsprint under the plate, the same size as the printing paper, also helps to align the margins and keeps the margins of the printing paper clean.

Multiple plates

Multiple plate prints require registration. For example, if there are two plates - one for each of two colors. Registration can be by simply eye-balling the second plate on the impression left on the newsprint which was under the first run. For more exact registration, a book or video would help to explain and demonstrate registration.

Between colors or at the end of a printing session, clean the plate using nontoxic solvents such as cooking oil and soy-based cleaning products. Water washable inks are available.

Loosen the pressure screws and remove the felts so that the sizing catcher can dry. Never leave the felts under the roller for a long time. If damp felts are left under the roller the pressure will impress a place in the blankets and interfere with even printing later on. The damp felts also will rust the steel roller. Rust can be removed with fine steel wool.

Uses of the chase

The chase that is included with the press is a plastic (PVC) 1/4" frame with a 5" X 7" cut-out that makes it easier to print relief or surface printing techniques. With the chase on the bed, a relief block up to 5" X 7" for plates 1/4" thick or under can be printed more easily.

The illustration shows a 5" X 7" X 1/4" woodcut block set in the chase, and a relief print pulled. A felt blanket was used to give an emboss effect. To have a flat print (no embossing) then the felt blanket is not used. Instead of a felt, a thin mat-board cover would be one way to eliminate the embossing.

Unmounted linoleum is available, which measures 1/8" thick. By gluing it to a 1/8" backing (such as 1/8" hardboard) you have a 1/4" mounted linoleum block that fits in the chase.

Planographic printing

When the printing surface is flat and the image is made by drawing or transfer methods, the printing process is called *planographic* because (unlike intaglio, relief and stencil printing) image and non-image are on one plane.

Stone lithography was the first planographic process invented. Metal plates took the place of stone. Then *waterless lithography* was invented. In waterless lithography, silicon replaced the water because, when dry, silicon resists oil and varnish-based inks. Ground-glass, (hand-ground by graining plate glass) and Mylar are used in waterless lithography printing and, if using hand-ground-glass, it is called *vitreography*.

Polyester plates work similarly but use a water-base moisture layer like old-time lithography. Popular brand names are Pronto and Smart plates. They work in laser printers and are popular for photos and typography because software allows for flipping for direct printing. Polyester plates are popular for they use non-toxic materials.

Stencil (pochoir), monoprints, and monotypes

Pochoir (stencil) methods as well as monotypes and mono-prints print on this rack-driven bed press. Monotype can be done on material of almost any kind. Acrylic plastic is popular for this. The monotype method is really a transfer painting technique. The term is used loosely referring to printmaking.

Monoprints, unlike monotypes, are true prints despite there may only be one and not multiples; that's why they're called monoprints. One makes a monoprint by using a true printing plate but with changing colors and printing methods, making many monoprints from one printing plate, without their being identical as they would be in a published edition.



Quarter-inch plywood, or laminated wood, fits in the chase. SafeTKut and acrylic plates plus numerous other block making materials exist, including collagraphs, can be used in the chase if they are 1/4" thick.



Planographic printing uses polyester plates and vitreography (waterless lithography) uses either quarter-inch ground plate glass or frosted Mylar prepared so that a silicon mask keeps non-printing areas free of ink.



Pochoir printing uses a stencil, shown here as a triangle-shaped window cut in copper, and placed over a rolled ink gradation on a plate done with a brayer. The color only prints through the window.

Type-high relief blocks

Thicker blocks up to .918-inch (type-high) require a thicker chase or type-high rails placed alongside; a type-high block the same size as the bed is shown in an illustration. This block is mounted on linoleum. Old-style letterpress plates also fit.

Wood engraving blocks for professionals are type-high. If a small wood engraving block or linocut is the printing plate, then it needs to be put between two long, narrow, type-high pieces like rails on each side of the small block. The rails can be wood built up to be the same height as the type-high block. The purpose of the rails or the chase is to put pressure on the sides so you don't have to guess what pressure to use. Without the railings or a chase, the bed will move along but when the block comes under the roller, it may stop, or tip the block, or not give the right pressure.



Type-high means that the printing block is the same as moveable type from traditional letterpress printing. Mounted linoleum is sold by companies such as Speedball. The illustration shows a full-size, 6" X 12" block almost the same size as the press bed.

VIDEOS

200 on YouTube, use search terms:

BILL RITCHIE, HALFWOOD PRESS or OMEMERALDA

Make a Badge (for the Mini Etching Press) - 10:30 Min.

Mini Etching Press Oil and Wax Finish - 5:31 Min.

Print the Intaglio Way (on assembled Mini Etching Press) - 13:12 Min.

Making a Mini Etching Press in 45 seconds - :45 Sec.

Attaching the Wheel - 3:14 Min.

The Hood of the Mini - 6:40 Min.

Attaching the Sides - 7:59 Min.

Tuning the Mini Etching Press - 6:39 Min.

Finishing the Bed of the Mini Etching Press - 9:08 Min.

DIY Etching Press? Assembling a Mini Etching Press - 5:48 Min.

Halfwood Mini Press Construction - with B. H. Giza - 14:09 Min.

Specifications of the DIY Mini Etching Press

These specifications are subject to change without notice.

Overall Dimensions (approximate):

Overall press length: 15 in.

Overall press width: 10 in.

Overall press height: 11 in.

Bed length: 14 1/2 in.

Bed width: 6 in.

Bed thickness: 3/8 in.

Roller lengths: 5 3/4 in.

Roller diameters: 1 1/2 in.

Press weight: 16.5 lbs.

Effective Printing area

Bed allows 5 X 7 in. or longer with small margins

Top roller raises to 1 1/8 in. from bed surface

Rack driven press bed and gear reduction train

Rack-driven bed provides approx. 6:1 advantage

Accessories and small tools

User's Manual

Sizing catcher (95% wool, 5% polyester) 6 X 12 in.

Pusher blanket (75% wool, 25% nylon) 6 X 12 in.

Allen wrenches (1/8" and 3/32") and Combination wrench, 5/16"

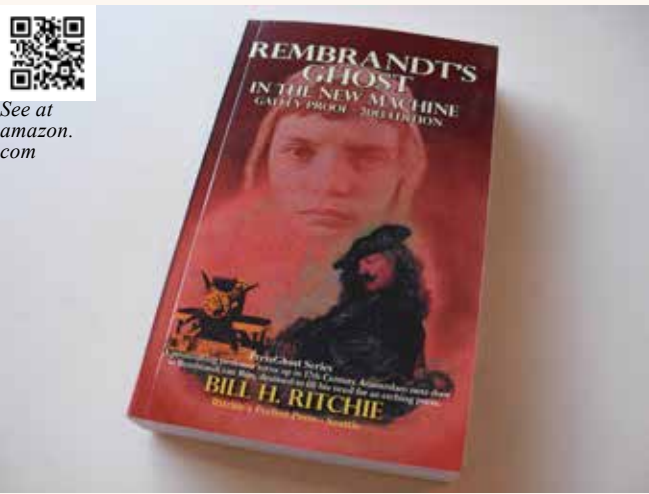
Chase for 5 X 7 X 1/4 inch woodcut, lino or vitreograph plates

Medallions (3)

Vinyl non-skid pads (4)

Vinyl finger gripper

Books for printmakers by Bill Ritchie



In 1652, on a backstreet in Old Amsterdam, a paper mill is working into the night as Rembrandt van Rijn, a regular customer of this establishment, makes one of his orders for fine etching paper. The 7-year old son of the owner, Arent de Gelder, goes with his father to deliver the finished paper. A casual gesture by the famous Rembrandt—a gift of an etching to the boy—changes the youngster's life. Another life-changing experience begins on October 31, 2012, when William "Mac" Handyside MacRitchie collapses in his printmaking studio. Mac comes to in a few minutes—but he is a little disoriented. There must have been some magic in the old copper etching plate he had been cleaning with lacquer thinner because, in the time of just those few minutes that he was passed out, he takes a week-long, trouble-filled quest to Rembrandt's time and place: 1660, Amsterdam. Mac's time-travel journey starts out badly as he discovers himself stowed-away on a putrid dung boat along with his Mini Halfwood etching press and printmaking chest. He embarks on a deadly liaison with a wicked procuress, poses as a scholar from the American colonies, and seeks to meet Rembrandt van Rijn. The famed artist, Rembrandt, desperate for money, believes Mac can help him make a comeback as a printmaker and so he covets Mac's Halfwood press. Mac will encounter Arent de Gelder, along the way. The rest is history!



In this ongoing saga, an artist designed and made two-hundred etching presses in wood and steel. People called them works of art. He tells how the first thirty buyers bought the Halfwood presses to make their prints. As with any art, there's more to this than meets the eye because in the tiresome, repetitive work of crafting and boxing presses for shipment (to some fifteen countries outside the US), he made up stories for entertainment. Aspiring to become a virtuous, virtual teacher, he took copious notes. The Printmaker's Tale is about real people, added to which are fictitious characters and events. He began in 2008 with, Halfwood Presses: The Story, writing as Harris Sweed. The 2016 edition is a collage of stories based partly on historical fact but mostly fiction. the characters include a Jesuit priest, a Spanish beauty, a Basque navigator, a Russian castaway, and an Aleutian hostage. Oddly, the author shoehorned in a screenplay (his 50 years in printmaking being like a movie) based on his experiences as a college art professor. Also, Who's Who Among Owners of the Halfwood Press, the people and testimonials praising the Halfwood presses. The book ends with a ballad, Vladimir's Song, a legend about a ship - the Emerald - Jewel of the Sea - which brought the Halfwood Press to this printmaker's tale.

Seattle people behind this award-winning press

Bill Ritchie is proud to lead the team which made the Mini Etching Press one of the three Silver Award winners in the *A'Design Awards and Competition* in Milan, Italy.

Bill taught for 19 years at the UW as a professor of art in traditional printmaking and media arts and retired at age 43 guided by a vision of *Perfect Studios* - where teaching, re-search, practice and service may happen concurrently. To this end he architected *Emeralda: Games for the Gifts of Life*, as a boundless suite of learning games set in an imaginary place. *Emeralda*, in his words, is, “An artist’s virtual promised land for art in the age of digital reproduction.”

He designed the original Halfwood Press in 2004. With his wife, Lynda, he lives in Seattle’s Uptown where they own the Mini Art Gallery, showcasing his life’s work and serving as office and work space for Halfwood Presses.

The presses are engineered and manufactured in the Ballard area of Seattle by his co-workers, Tom and Margie Kughler - of Kughler Co., Inc. The *Busker Etcher*, Ethan Lind, has been a longtime tester of Mini Etching Presses at Seattle’s Pike Place Market and the Gage Academy.



Bill demonstrates the Halfwood Presses at art festivals, schools and colleges. It’s always a traffic stopper and the Mini Etching Press is especially attractive to kids. Bill usually inks plates and kids print them.



Lynda Ritchie showed that it’s not difficult to lift and move a Galleon Halfwood Press in this photo made in 2013. She frequently does video camera work for the YouTube videos when Bill demonstrates.

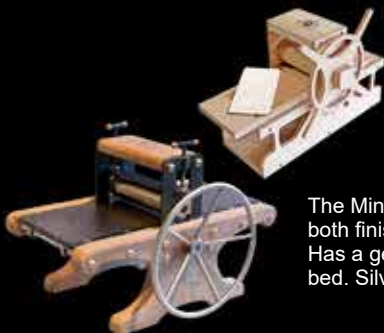


Margie and Tom Kughler, owners of Kughler Co., Inc., were photographed in 2004 when they converted Bill’s wood mockup to the actual steel parts of the Century press.



Ethan Lind tests the Mini Etching Press in such venues as the Gage Academy, the Pike Place Market vendor’s arcade and retirement communities in Seattle.

PRINTMAKING WORLD PRESSES OF THE LINE



The all-wood WeeWoodie Rembrandt Press kit (modeled on a 17th C. press as used by Rembrandt) has a 3-inch wide bed. Silver A'Design Award, 2013.

The Mini Etching Press is available in both finished and DIY unfinished wood. Has a geared, rack-driven 6-inch wide bed. Silver A'Design Award, 2015.



The Pram Halfwood Press is the original portable, beautiful *smart* etching press. Has a geared, rack-driven 6-inch wide bed. Silver A'Design Award, 2012.



The Frigate Halfwood Press has a geared, rack-driven, 7.5-inch wide bed and linked pressure screws.



The Galleon Halfwood Press has a geared, rack-driven, 9-inch wide bed and linked pressure screws.



The Mariner Halfwood Press has a geared, rack-driven 12-inch wide bed and linked pressure screws.



In a world where millions of products and designs are launched yearly, the A'Design award was born of the desire to underline the best designed products.

Competing with 15,000 projects, Halfwood presses were among 940 award winners 3 consecutive years.

All presses come with felt blankets
Details and pricing are online at
<http://www.printmakingworld.com>
subject to availability.

This publication was designed and produced by Bill H. Ritchie, who is responsible for the contents. Address all questions and suggestions to: Bill Ritchie, Emeraldalda Works, 500 Aloha Street #105, Seattle WA 98109 USA. ritchie@seanet.com