

# Japanese-style Woodblock Printing (moku-hanga) Basics

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Traditional eastern printmaking techniques use water-based relief processes using woodblocks as matrices and a printing pad as a means of pressure. I liken the results to watercolor as opposed to western techniques which are more like oil painting. To be a successful *hanga* printer, it is important to balance several variables which include paper, water, paste, pigment, pressure can be a bit overwhelming for the beginner who faces a steep initial learning curve. I find that the joys outweigh the difficulties and that the process allows for a direct communion with materials that are



both non-toxic and natural. This handout is intended as a framework of basic technique, a smattering of my own observations, and a list of further informational resources.

## Printing Procedures

As I mentioned before, *hanga* does not come easily. As your first impressions will quickly 'educate' you, I would tear down at least twice the number of sheets that you need. If you do tear as opposed to cutting, be sure to allow for clean, cut corners where the *kentos* will make good contact. Some people prefer to affix temporary tabs to be later removed after printing.

The paper is dampened to allow for better pigment absorption and structural stability. I use a wide brush and wet each alternating sheet and store overnight in a ziplok bag. Some hard papers such as *Torinoko* need more water than *hosho*. Winter was the preferred season to print as the cold limited mildew growth while printing long editions. I freeze my paper between printings both to reduce foxing and to distribute the moisture throughout the sheets. How damp? The paper should be supple, not 'heavy' yet feeling cool to the back of the hand. The paper must now be kept at all times under plastic during the printing process.

'Inks' are basically dry pigments mixed with water and sometimes a bit of *o-saki* (rice alcohol) to help in mixing and as a preservative. Pigment suspensions are more convenient, although have preservatives and may contain additives such as glycerin or gums. The traditional palette was simple: *gunjo* (prussian blue), *hon yoko* ('indian' red), *shin seki ei* (neutral yellow), *shu* (orange red), *ai-iro* (indigo), *gofun* (white) and *sumi* (black). The proportion of pigment and water varies considerably between tea and thick paste. A small brush (*hakobi* or *tokibo*) was used to stir and transfer color to the block.

Another element used is rice paste. The rice paste gives the pigment 'body' and allows the color particles to remain in suspension. The more paste, the smoother the color, the less paste, the colors print in a dappled fashion (*goma zuri*, Japanese for sesame seed).

Today, this can be purchased in premixed tubes or prepared. High-gluten sticky rice used in sushi works well. Many printers in Japan use all-purpose flour, while others have good luck with methyl cellulose (2.5 teaspoons methyl cellulose powder in 1 cup water and let sit) and corn starch. The advantage of the pre-mixed tubes is that they contain a trace of formalin as a preservative. The 'home-cooked' varieties are usable for only a day. There are various recipes for making paste. I add 1 part rice flour 8 parts cold water. I add 1/2 water, sprinkle the flour in and stir the pot to keep the particles in suspension. As the heat rises, the paste will turn whitish, then semi-transparent with a bluish cast. I take it off the burner and let it cool. As the paste cools, it will thicken. The paste will be transferred to the block using a stick. Ideally, you want the paste to be thin enough to dribble onto the printing block, but thick enough to stay on the stick.

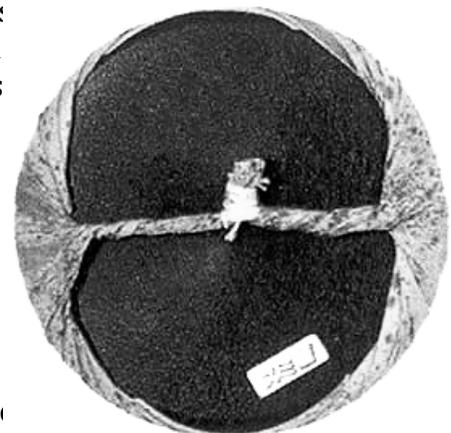
This pigment and paste mixture is applied to the block. It is difficult to be specific about how much pigment and paste is needed. As mentioned above, the amount of paste can dictate consistency of tone. A common mistake for beginners is adding too much water. Water is simply a vehicle for the distribution of the pigment. Too much water and the print can 'drown'. Too much paste and the carving will clog up and pigment will 'squeegee' around details. For a medium tone printed on an 8.5" x 11" block, I would estimate you might need a quarter's drop of pigment with a dime's worth of paste- but such estimates border on absurdity as experience is the only true guide.



This (hopefully ideal) mix is spread on the block with a brush. The brushes come in two major types: the *maru bake* (pronounced ba-kay) and the *hanga bake*. The *maru bake* is generally used for large areas- it is important to use the largest brush that you can get away with as the brush (and your block) will become an ink reservoir. The larger the reservoir, the less need for continuous replenishing. The *hanga bake* is best at fine detail work. The smooth out colors. As opposed to the *hanga*

*bake's* long handle, the 'shoebush-like' *maru bake* must be processed in order to lay a smooth layer of pigment onto the block. This is done by first melting the hairs on a hotplate into a convex shape- a very smelly ordeal. Great care must be made to give a symmetrical balance to all sides. Traditionally, the bush is wetted and rubbed along a shark skin. Today the facsimil 'dragonskin' that works well. I have mounted this to a disk on my table saw which works very well, but a bit dangerous. The idea here is to allow for the hairs to have split ends. The ends are softened while the shafts remain more rigid. The *hanga bake* needs no such conditioning.

The *baren* is a deceptively complex tool. The tradition version (*hon baren*) is composed of a coil of braded bamboo (*baren*) strands, the support disk (*ategawa*) whi

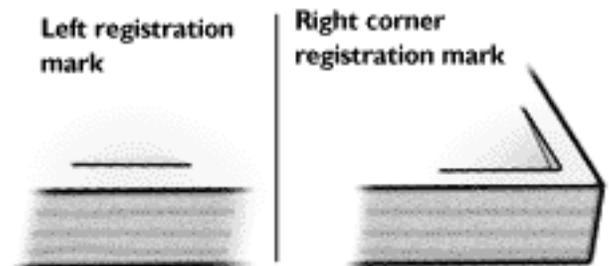


was made of laminated paper, and the bamboo sheath covering (*takenokawa*). Bumps result from the coil's braiding- these bumps serve as 'pressure points' to transfer force from the printers arm to the paper. There are many different types of *baren*s and most are based on the number of bumps- the less bumps, the more pressure is exerted on each.

Eventually, the bamboo sheath becomes worn and needs to be replaced. This is done by dampening a new sheath (incidentally, the sheathes are shed each spring after new bamboo shoots, or culms emerge) and cutting to size using the old covering as a template. The surface of the new covering is rubbed with a good deal of pressure to make it supple and reduce the surface texture. The sheath is now stretched width-wise which will help it to later become taut after drying. The *baren* is then centered face down upon the sheath. The covering process begins on one side- folding and overlapping as you work toward the center. The process is mirrored from the other side, then the end (or handle) is twisted and held down. The *baren* is then turned 180° and that side is treated the same way: folding and overlapping until the end (or handle) is also twisted. It is important to twist the handles in the same clock-wise or counter clock-wise direction. The handles are gathered together and very tightly tied together. The result should be tight and neatly done- the quality of covering a *baren* was seen as a measure of the printer's skill. The *baren* is maintained by regularly rubbing with a light oil (preferably camellia oil) and stored upside-down when not in use.

So, we have our dampened paper, pigments, paste, prepared printing brushes, and *baren* at the ready- what's next? Chose your printing orders. Traditionally the outline was printed first to aid in registration. As nearly all the pigments are transparent, this initial impression can be overprinted without obscuring. Then, lighter colors were followed by darker to minimize offset of previously-printed pigments onto other blocks.

To begin printing, place either pieces of rag or a non-slip surface mat underneath the woodblock for cushion and stability. Have paper (under plastic) at hand. Start printing by dribbling the proper amount of paste and pigment onto the block. Moisten the brush face with water. Since you are starting with a dry block, scrub the mixture vigorously into the surfaces. It does not pay to be hesitant here- just avoid areas that are not intended to be printed. Let this soak in for a minute or two without printing. Apply the same amount as before, this time, scrub as before, but then 'graze' the brush at an angle over the block's surface 90° to the wood grain. This is where you can be subtle- how subtle? Its said that this last pass of the brush should make no noise- impossible, of course, but a standard to shoot toward. Light is very important- the reflection gives a pretty accurate idea of how much water is on the block- most of the time, the block should be slightly reflective. Time is a factor, as the water will want to evaporate- rushing will cause frustration- get used to how things behave and react accordingly.



Now, pick up the paper, taking care to fit its corner first into the corner kento (kagi) and then along the same bottom edge to the strait kento. Drop the paper down neatly. Pick up the *baren* and lightly move it over the areas to be printed. After the paper is tacked down, apply more pressure in a circular motion. At this point, the image may start to print though to the back which allows for a handy guide to where one must press. It is



EXTREMELY important that you keep the *baren* flat at all times. For this reason, I mentioned in the carving section to keep some nearby un-inked areas on the block to serve as 'outriggers'. If the *baren* is used at an angle, then pigment that lies in the carved-out areas will be picked up creating 'chatter'. Another variable in controlling printing effects is pressure. Light pressure picks up paper texture, hard pressure allows for smoother printing. Using the *baren* is tricky, but informative process. As opposed to most mechanical press techniques, the hand printer can be selective in his application of pressure where it is needed. Typically, larger areas need more pressure. Fine *keyblock* lines may need very little. As in the *baren's* principle of 'bumps', the smaller the contact point, the greater pressure is exerted or absorbed.

*Bokashi*, or graduated printing is achieved by employing a few methods: First add a small layer of damp rag at the 'white' areas, then a small dab of paste in the middle followed by a line of pigment. Take the brush and vigorously move over the areas in a very slight figure-8 motion favoring the horizontal. Take note which end of the brush contains the pigment, and orient it the same way in each impression. Eventually, a graduated banding of color will be created.



After printing, examine the impression. If satisfactory, replace under plastic to retain the moisture and continue until the run is complete. Next to keeping a flat *baren*, most problems come from lack of moisture control. It is advisable to then let the prints 'relax' for a few hours so that the newly introduced localized moisture is absorbed throughout the sheet and the stack. Too

much moisture can cause a resistance to overprinted colors. This is remedied by placing dry pieces of paper in between printed sheets. The opposite (drying out) also commonly happens, especially around the unprinted margins. In this case, I add dampened pieces of paper within the stack and set for a few hours. If the paper is too damp, the back may begin to 'pill' or rub off with the *baren's* friction. A little oil on the *baren* will help, but

most often, a backing sheet (freezer paper works well) should be used to protect the back. Often impressions are not 'strong enough' need to be reprinted- the *kento* system allows for perfect registration. If the marks are not registered, they can be adjusted by either paring the mark to move the impression down, or pounding a wood wedge to raise the impression.

After the printing is done, thoroughly clean brushes and lay them bristle down to dry. If the water stays in the wooden base, the wood will expand, may crack and mange will ensue with hairs will fall out everywhere. Place the printed sheets in between newsprint sheets and press under a weight. It should take about one to two days to dry.

### **Trouble-shooting**

- Not strong enough impression: overprint or increase pigment amounts, let print 'relax' for a day.
- Hairs sticking out of brush causing streaks: Cut hairs off- do not pull out.
- 'Globby' edges- too much paste and or ink also scrub vigorously
- Speckled impression: If hard edged, need more pigment and possibly more water, if soft edged speckles, the opposite may be your problem.
- Paper buckling during printing: Need to re-wet and relax- monitor progress.
- Paper droopy: Dry out by placing dry sheets and monitor progress.
- Chatter or unwanted areas being printed: Check to make sure *baren* is flat, block may need further clearing.

### **Library:**

Online:

Woodblock.com <http://www.woodblock.com> Articles, encyclopedia, library - just about all you need to know.

Tanuki Prints <http://www.tanukiprints.com> My Wordpress site

Woodlike Matsumura: [www.woodlike.co.jp/zen3/](http://www.woodlike.co.jp/zen3/) woodblock supplies, Japan

McClain's <http://www.imcclains.com/> woodblock supplies, USA

Laitinen, Kari et al., *The Art and Craft of Woodblock Printmaking*, University of Art and Design Helsinki, 2001- woodblock printmaking with oil-based inks and the Japanese watercolour woodcut

Salter, Rebecca, *Japanese Woodblock Printing*, University of Hawaii Press, 2002. Great inexpensive introductory guide.

Yoshida, Hiroshi, *"Japanese Wood-Block Printing"* Sanseido, Tokyo 1939 - the original *hanga* bible- expensive, but online at woodblock.com

Yoshida, Toshi, *"Japanese Print-Making"*, Tuttle, 1965- many 'contemporary' techniques. Often found in larger libraries.