

Working Leather

(Modified from Leatherworking by the Missouri Dept. of Conservation
<http://www.conservations.state.mo.us/teacher/highered/crafts/craft11.htm>)

Basic Leatherworking Kit



Awl

Scissors or razor knife

Awl – there are two types - knife blade end (recommended for most work) and round ice-pick type.

Leather punch – this is the chisel type punch struck with a mallet. The rotary type punch, cutting a round hole has few uses except for belt & strap holes, attaching buckles, attaching wangs, etc. Never use a rotary punch in sewing leather garments or moccasins.

Ruler - steel or wood

Mallet - rubber, plastic or rawhide

Wood block-at least 6" x 6", soft wood like pine works best

Harness needles-2 minimum used primarily for heavy pre-punched leather

Glover's needles- (This is the work horse for sewing leather) 2 minimum of several sizes. #0 or #00 work best for most items (moccasins) with #1 or #2 for soft thin leather like shirts

Thread - linen (to be waxed), waxed linen thread or sinew

Beeswax (to finish edges or wax thread)

Rubber cement, barge cement or leather weld

Conditioner-neat's-foot oil, mink oil or bear oil

Leather dye (black) either oil or spirit (alcohol) based

Heavy paper (grocery bags) or cardboard for patterns

Leather

Cowhide or commercial leather is used for belts, gun slings, pack straps, cartouche boxes & straps, shooting bags & straps, shoes, etc. Brain tan, commercial brain tan or brain tan look alike leathers are used for moccasins, pants, shirts, frocks, bags, or other items made by the troops on the trail.

Tanned leather is sold by weight per square foot. Thus, one-ounce leather weighs one ounce per square foot, two-ounce leather weighs two ounces per square foot and likewise for other weights. One-ounce leather is approximately 1/64" thick, two-ounce leather is 2/64" or 1/32", and the measurement continues to get thicker with heavier weights. Leather is usually sold by the hide, half-hide or by parts such as back or shoulder and charged per square foot.

Intended use determines the type of leather purchased. Common uses and weights are:

belt or pack strap leather 7-9 oz. - cowhide - white (buff) for pack straps

cartouche pouch or shooting bags 4-10 oz. - cowhide

garment leather 2-3 oz. - buckskin, garment suede, chamois, split cowhide; baintan or baintan look deer hide is best for garments; elk and large mule deer can be too thick for shirts, but OK for pants.

moccasins - moose, deer, split cowhide, or elk in that order of preference; use baintan or baintan look.

Make sure that if you use the cheaper chemically tanned leather, and that it is **NOT DEEP CHROME TANNED YELLOW** but get a baintan look alike, commercial baintan, faux baintan, etc. Be sure to always make your garments with the **ROUGH SIDE OUT**, this goes for moccasins too. The slick side will go on easier and the rough out is what they are supposed to look like.

"Indian tanned" leather did not have a smooth side. See the *A Manual for Interpreting Lewis & Clark* for more information on leathers and sources for leather.

ASSEMBLY

Assembly procedures are generally similar for all projects with one important exception: heavy leather must be pre-punched before stitching. **DO NOT USE A ROTARY PUNCH** to pre-punch moccasins or garment leathers, use the blade awl or the chisel punch and a mallet. With soft leather, a glover's needle (which is triangular with sharp edges) eliminates the need for pre-punching.

If possible, glue pieces together with barge, leather weld or other glues made for leather, as they will be stitched. This is important on heavy leather such as on knife or axe sheaths, belts, straps, cartouche boxes, etc. Glueing pieces together before hand will assure proper alignment of stitch holes. Consistent holes are important so seams don't pucker. For heavy leather, begin by making the stitch lines 1/8 to 1/4 inch (1/2 cm) from the edge. Using an awl or mallet punch, make regularly spaced holes through. Drive the awl by hand; drive the punch with a mallet.

When punching the leather, strive for uniformity, but recognize that small inconsistencies are the mark of human craftsmanship.

Most braintan will not have to be pre-punched if it does use a knife blade awl as you sew. Glover's needles will usually penetrate several thicknesses of leather. You may want to use a thimble and/or skin pad (folded leather in the palm of the hand) to protect hands while punching or sewing. A good leatherworker will hold both needle and awl in the same hand and simply alternate tools as they sew. **Do not try to pre-punch individual pieces of soft leather** and then join them. The stitch holes invariably will not match, giving the seams a puckered appearance.

Leather (cartouche boxes, belts, etc.) should be dyed with a leather dye after the stitch holes are punched. Alcohol-based dyes penetrate well and produce excellent results but oil dyes seem to give a deeper dye that is less prone to fading. Follow the instructions that come with the dye. To sew a garment, select one of the stitches described in the next section and sew all pieces.

Finishing

Once all of the seams are sewn, the project is ready for finishing. Finish hard leather by working neat 's-foot, mink or bear oil into the leather. Protect exposed edges by rubbing briskly with beeswax. Do not oil braintan, suede, or garment leathers.

Stitches

There are several stitches that can be used to sew leather. The most common ones are the running stitch, saddle stitch and whipstitch. For all stitches, begin by cutting a length of linen thread about an arm's length. Waxed linen is best for sewing leather. Again linen was much more common than cotton. To be correct you should sew your garments with linen thread. **Do Not Use Artificial Sinew**, it is not only incorrect but can be easily spotted in your garments. Artificial sinew "frays" badly in areas of wear and it will cut leather. If the thread is not pre-waxed, wax it now by passing it several times across a piece of beeswax. **You must use waxed thread for sewing leather.** Thread one or both ends of the thread with needles (this will depend upon the stitch). When sewing a single thickness of thread, pass the strand through the needle's eye and pull several inches through. Twist this end around the main thread. When sewing with a doubled

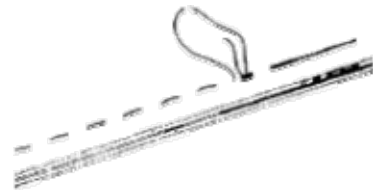
thread, pull the strand through the needle until both of the ends match up. Knot the thread with an overhand knot.

Always begin and end seams by backstitching. Backstitching is not a type of stitch, it is a technique for beginning and ending a seam, or joining a new piece of thread into the seam. The purpose of backstitching is to lock the thread and prevent unraveling at the ends of the seam.

To backstitch, simply take several stitches of whatever type is being used in the opposite direction of the desired seam, then return through the same stitch holes in the direction of the seam. When starting to sew a seam, don't begin with the first hole or at the very edge of the leather. Instead, skip several holes and begin sewing about an inch from the edge. Stitch back to the edge of the leather or first hole. Reverse directions and proceed along the seam until the thread is almost exhausted or the end of the seam is reached. Now backstitch several holes, approximately an inch. If joining a new thread, backstitch so that it begins where the old thread ends. Backstitching should be visible only on close inspection.

RUNNING STITCH

The simplest stitch in leatherworking is a running stitch. Use single or doubled thread and one needle. Simply pass the needle through one hole and then back through the next hole from the opposite side. The finished stitch looks like a dashed line. Small stitches are stronger and look better than large ones. A running stitch can be used for heavy leather or soft leather. You can reverse and stitch back making a continuous sewn line. This is commonly used on seams with a lot of stress – your pants?



Running stitch

SADDLE STITCH

The saddle stitch requires a single thickness of thread with harness or round needles at both ends. It is recommended for pre-punched stitches usually on heavy leathers such as cartouche boxes, shooting bags, straps, etc., since both needles pass through the same holes.

Begin saddle stitch by passing one needle through the aligned holes at one end of the seam. Pull through until there are equal amounts of thread on both sides of the leather. Take one needle and start it through the next stitch hole from the same side of the leather. Start the other needle through the same hole from the opposite side. Grasp both needles and pull through until the stitch is taut. Put equal tension on both needles. Repeat the procedure at the next stitch hole and so on until the end of the seam. If possible, grip the leather pieces between your knees so that the work is perpendicular to the floor. This makes it easier to pass the needles back and forth.



Saddle stitch

WHIPSTITCH

The whipstitch is the most commonly used stitch, used for both hard and soft leather. The leather may or may not be pre-punched. Either a single or double strand of thread may be used, but a double strand is preferable. Use only one needle. Pass the threaded needle through the work, and pull all but a few inches through. Move to the next stitch hole and push the needle through, starting from the same side as for the previous stitch. In this way, when the thread is pulled taut, the stitch passes over the edge of the joined leather pieces. The stitching motion for the whipstitch is circular. Keep stitches fairly close together.



Whipstitch