
Guide to Leatherworking

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Overview

This text on leatherworking is non-specific and appropriate for both people making riding straps for dragons (there is a [riding strap overview](#) available) and making saddles and other equipment for runners. This text assumes that you already have hides that are properly tanned and that are from the appropriate portion of the bovine (straps are best made from the butt or back sections of the hide as they must be capable of taking a lot of strain and wear).

This text will cover the tools used in leatherworking, the proper methods to cut hides, several popular stitching methods, and how to add buckles to the leather. This is not a complete guide to leatherworking, however, as many details have been left out. It is more for the purpose of roleplaying the actions that it is to show a real person how to mold leather.

I got most of the information for this guide from [The Leatherworking Handbook](#) by Valerie Mitchell.

Special Terms

You will see two terms frequently in this text, flesh side and grain side. Leather has two sides, and the grain side is the side where the hair used to be or the outside. The flesh side is the underneath side of the leather.



Tools

Awl: An awl blade is used to pierce the holes before hand stitching can be carried out. The blades are diamond shaped, tapering to a sharp point that penetrates leather easily (picture an elongated-bulb-shaped wooden handle with a short, thick needle attached). The handle should comfortably fit in the palm of your hand.

A scratch awl has a round, tapered blade for use in marking around patterns before cutting out (the blade isn't quite sharp enough to pierce all the way through the leather).

Bone Folder: A smooth, flat, polished piece of bone used for turning edges. It is about a handlength long and one to two fingers wide.

Clams : Also known as clamps. These are used when hand stitching to hold the work, leaving your hands free. A clam is to narrow pieces of wood bonded together such that a clam-shaped gap is left on one end while, on the other end, the wood is firmly bonded together without a gap. The end with the clam shape can be pried apart so that the leather is held in position. It is held between the knees.

Compass/Dividers: Used for marking guidelines for stitching and creasing.

Creaser: Leaves a thin, decorative line in the leather and is mainly used close to edges or to hide seams. It has a handle much like an awl's with a long, curved neck that flows into a spade-shaped blade head. The blade is heated and pressed firmly into the leather.

Edge Beveller: Another bulb-handled tool. The blades are available with either a flat back or a concave back. It is used to round off the edges of thick leathers that are ready for burnishing.

Hammer: Hide hammers with large, flattened, circular heads are used for flattening seams and turned edges.

Knives: The choice of knife to use will depend on the thickness of the leather, the shape of the pattern, and the size of your hand. A shoemaker's knife is used for most work. It has a shortened blade that is easy to use and to sharpen (picture a larger exacto-knife blade with a wooden handle). A clicking knife with its curved blade (the shoemaker's knife again but with a curved gouge out of it) is used for cutting out curved or awkward pieces.

Needles: These are blunt, egg-eyed harness needles which are used when hand-stitching. They do not need to be sharpened as they will not be pushing through the leather (that's what the awl knives are for).

Paring Knife: Used to reduce the thickness of leather along edges. This has a steep-angled blade with a long, beveled cutting edge on one side and a completely flat back.

Pliers: Flat-nosed pliers used to pull through stubborn needles and to grip leather.

Pricking Iron: Picture a wide chisel with lots of long teeth along the blade. It is used to mark the position of stitches but not to completely penetrate the leather (the awl knife is for going through the leather).

Race: Grooving tool with a U- or V-shaped cutter for removing a thin channel of leather. By removing this channel, it makes it easier to form a sharp bend or sink stitches.

Scissors: Self explanatory.

Sharpening Stone: Water or oil stones.

Straight Edge: Self explanatory.

Strop: A flat piece of wood with a layer of leather, flesh side up, that is glued to one side. It is essential for keeping knives sharp.



Cutting Out A Pattern

The key ingredients for cutting leather are a sharp knife, good light, and a firm, flat surface. You should examine the grain surface of the leather for scratches, holes, or uneven coloring and avoid these areas when overlaying your pattern.

Keep the knife upright and cut through the leather by exerting firm, downwards pressure. Do not let the knife lean to one side as the edge won't be straight. Always strop the knife regular as a blunt knife requires more pressure to make the same cut as a sharp one (which can easily lead to your hand slipping and a not very pleasant accident). Do not force the blade to go through the leather. Thicker hides may require two or more cuts into the same line before the leather is completely cut through.

Edge Finishing

Once an item has been cut out, edges that are to be left as single layers are finished. Edges that are made up of several layers stitched together are finished after stitching.

The first step in finishing is beveling. In beveling, you remove the sharp angles in order to round the edges. You will be using an edge beveller to do this. Lay the work on a firm, flat surface, with the grain side up. The leather is held securely in place by one hand while the beveller is held in the other. The beveller is pushed along the edge of the leather at a 45 degree angle to remove a thin shaving. The leather is then turned over and the process is repeated on the flesh side.

The next step is called burnishing or polishing, which prevents the edges from becoming ragged or frayed. The burnishing solution is made by mixing one part paper gum with two parts warm water in a small glass jar with a piece of folded felt wrapped around a finger-wide, half-finger-thick piece of wood used as an applicator. The burnishing solution is applied to a hands-length of the edge before a piece of canvas is vigorously rubbed over the area to bind the fibers.

The final step, if desired, is creasing, which is placing a thin line close to the plain edge. Place a divider atop the leather and position it so that it is in line with where you want the crease to be. After heating the creaser over a burner, push the creaser forward along the divider (if heated to the proper temperature, the creaser will glide smoothly) so that it leaves a dark (not scorched), polished line.

Skiving

Skiving is the process of reducing or paring the thickness of the leather so that buckles can be attached or for lapping together two pieces of leather. Skiving is done on the flesh side of the leather and the tool is a sharp paring knife. The knife must be kept razor-sharp so use the strop often.

The leather is held against a flat surface in one hand while the blade is held at a 30 degree angle in the other. The blade is positioned so that it is parallel to the edge. The blade is pushed forward, running along the edge and making a diagonal cut, until it reaches the end of the edge.

Hand Stitching

You will need an awl, a clam, a pricking iron, dividers, a hide hammer, a knife, pliers, harness needles, beeswax, linen threads, and a bone folder. The techniques discussed below are for a right-handed person. Only one type of stitch will be discussed, the saddle stitch, though there are several different stitching types. The saddle stitch is the most useful and versatile stitch.

1. Using the dividers, mark the line where you want the stitches to go.
2. Holding the pricking iron firmly with one hand, place it on the line and strike it with the hide hammer. This should leave a row of slanting slits. These are guide marks only so do not attempt to pierce the leather completely. Repeat all the line as many times as necessary.
3. Measure the overall stitching difference and multiply this number by four. This is the length of thread you will need. Thread a needle at both ends.
4. Beeswax the thread by drawing it repeatedly across the block of wax until it is well coated.
5. Lock the needles onto the thread (this will help free up your fingers. Push the needle (the thread should be running through the needle's eye already) through a a loop in the thread (you do not make the loop. Linen thread is already looped and twisted together. Not like clothing thread) that is about a quarter of a needle's length from the end. Pull the needle all the way through this loop until the thread is locked in place.
6. Position the leather in the clam so that the line to be stitched is along the top. You need to be sitting high enough for your knees to grip the bowed area of the of the clam and your feet should rest on a box. You should stitch towards you if possible.
7. Take the awl and turn the blade until two of its facets are facing towards you and the one furthest away is parallel to the top edge of the leather. Pierce the leather through the first stitch guide mark with a quick, thrusting action. Do not wiggle the blade as you want the hold to be diamond-shaped and not round. Keeping hold of the awl, push one needle through the hole and pull the thread until there is an equal amount on each side.
8. Holding one needle in the left hand and the other between the index and middle fingers of the right hand, use the awl to pierce the next hole.
9. Resting the awl in the palm of the right hand, bring the right needle forward and hold it between the thumb and index finger. Push the left needle through the hole.
10. Place the right needle (still in the position described in step 9) behind the left to form a cross. Gripping the left needle with the thumb and index finger of the right hand, pull the left needle through.
11. Turn the right hand in a counter-clockwise direction until the tip of the right needle can be slipped into the same hole, positioning it behind the thread. Do not pierce the thread. If necessary, hold the thread out of the way (towards you) as the right needle emerges.
12. Lift the thread over the top of the right needle (called casting) while pulling it through with the thumb and index finger of the left hand. Picture casting as causing the two threads to twist slightly.
13. Evenly pull in the stitches tight.
14. Repeat the above until you reach the end of the line
15. Finish off by stitching backwards for two or three stitches. Then leave both ends of the thread on the flesh side of the work and cut them off as close as possible to the stitching.

Attaching Buckles

Buckles are attached by folding a piece of hide with the buckle sandwiched in between the two sections. The leather enclosing the buckle should be left at its full thickness, but the end should be reduced by half (skived). The two sections are then stitched together (along the length of the shorter section) and both the top and bottom edges are stitched.



More Strap Info

Instead of having a simple, cut-edged strap, another technique is called a calf strap. In this technique, the leather is folded (not firmly though) in half and then the outer edges are folded inward, leaving the two edges buried inside the original fold. The stitching is placed along the top of the strap (where the two edges were folded in together).

Leather Maintenance

All leather work should be inspected at least once a month, with the stitching especially requiring regular inspections. All metal bits attached to the leather should be checked that they have no sharp edges and that they haven't worn too thin.

The leather should be greased several times a month. This is normally done after the leather is washed but before it is soaped (if you do plan to saddle soap the leather). Before the leather is washed, all metal bits should be removed from the leather (if possible) and they should be separately washed. A damp sponge (the water should be cold or lukewarm) is rubbed on the leather and the leather is then left to dry naturally. After the leather has dried, the grease can be applied. The grease should be worked deep into the leather to keep it soft and any extra grease should be wiped off with a rag. The metal fastenings should also be coated as well. After the leather has been greased, the leather is soaped. The technique for soaping the leather is to spit on the bar of saddle soap and then to rub a dry sponge across the soap. This soaped sponge is then rubbed across the leather in a circular motion.