

Manual

The pattern works relatively simple, all edges have a number and a letter. L, R and M are for left, right and middle respectively. Start with R1 and L1, then R2, L2 and so on.

Material: I recommend veg tanned leather about 3.5 mm (8 to 9 oz) thick. Thinner leather reduces structural stability, thicker leather is harder to bend. Other materials like foam is possible, but I have no experience with them, so it's up to you to adjust the pattern.

Lines: There are different types of lines. Drawn through lines are stitch lines, except for two marked lines. Dot lines are only for cutting at the very end of the project when the helmet is too small (see step 11).

Printed out on 100% the size it a tight:

Europa [cm]	Worldwide	Great Britain[inch]	America [inch]	France
59	L	1/4	7 3/8	6

Work from that to your hat size, check table 1 for ordinariness hat sizes.

> **Step 1:** Print and cut out all parts, tape them together (for overview see figure 1). I recommend making the helmet first from a cheaper material such as cardboard or at least paper to ensure the rough fit.

> **Step 2:** Trace all cutting lines and holes on the leather with a tracing tool or pen and cut them out (on the mask in the face area there are three places where it's up to you whether you want to cut, I don't recommend it for more stability).

> **Step 3:** Groove all stitching lines, cut the edges. The lines at the face part L7 and R7 I would not put on at the beginning, since fitting can deviate from the pattern. Go for some leather carving if you want.

> **Step 4:** Apply dye and resist if you like. Burnish the edges.

> **Step 5:** Punch all holes, large and sewing holes (not L7 and R7) and place on the grommets at the large holes if you want.

> **Step 6:** Start sowing with number L1, R1 and continue. On L4 and R4 make sure that the piece with the dot line is on the very tip of the other two pieces. This is on the back of the helmet. The two parts with M5 should fit in the middle (see figure 2). When you reach L7 and R7, align the holes and the front part and sow it together.

> **Step 7:** The comb is a bit tricky. The comb itself could also be made of other materials such as foam or animal hair, it becomes much lighter. But made of leather, in addition to the large pieces with M9 on them, you need 5 to 10 mm thick leather straps, which you glue to the edges of M9 to make the comb thicker. They don't have to fit perfectly, you can cut excess material afterwards and apply dye.

> **Step 8:** Before I add the comb part to the rest of the helmet, I recommend a long, about 40 mm thick piece of foam to insert the comb so that it has a large thickness on the part that fits on the helmet. To combine both parts, I used 4 mm Paracord (cheap and strong), also leather straps fit the purpose. IMPORTANT! While attaching the comb part, you must use an extra paracord for a zigzag pattern to better hold the left and right sides of the helmet together (see figure 3). In this way you can influence the shape of the helmet and adjust it to your head. Also use a paracord to hold the back of the helmet together.

> **Step 9:** Use a bucket of hot water (about 50°C, usually tap water hot) and put the helmet in for 30 - 60 seconds, but not the comb unless you use water prove glue. After ingestion, the leather is very soft and for the next about six hours, as it dries, you can shape the leather as you wish. In the lower neck area, I would bent the leather outwards and adjust the nose area. After drying you will notice that the leather is harder now. If you are not satisfied with the shape, just put some water on the inside of the leather and change it.

> **Step 10:** Surely you have noticed that the face mask and the rest of the helmet are only on the back attached to each other. For the front, use the six glue straps to attach it from the inside with glue. Depending on where you stick them, you can make the helmet fit perfect to yourself.

> **Step 11:** For a perfect fit, use foam pieces on the inside (see figure 3). Even if the helmet is too small, you can cut the dot line and the back of the helmet at M5 to be able to open the helmet a little further, but it will be less strong afterwards.

> **Step 12:** ENJOY! If you have any questions, feel free to ask.

Table 1: Hat sizes

Hat Size

Europa [cm]	Worldwide	Great Britain [inch]	Amerika [inch]	France
51	XXS	6 1/4	6 3/8	2
52	XXS	6 3/8	6 1/2	2 1/2
53	XS	6 1/2	6 5/8	3
54	XS	6 5/8	6 3/4	3 1/2
55	S	6 3/4	6 7/8	4
56	S	6 7/8	7	4 1/2
57	M	7	7 1/8	5
58	M	7 1/8	7 1/4	5 1/2
59	L	7 1/4	7 3/8	6
60	L	7 3/8	7 1/2	6 1/2
61	XL	7 1/2	7 5/8	7
62	XL	7 5/8	7 3/4	7 1/2
63	XXL	7 3/4	7 7/8	8
64	XXL	7 7/8	8	8 1/2

britan inch; 1 m = 0,0254 inch

american inch; 1 m = 0,025400051 inch





Figure 2: M5 at the backside of the helmet



Figure 3: Zigzag pattern from the inside and foam

Here some more pictures to orientate on



