Niek's Turtle

Merry Christmas everybody.

Here is my second gift to the community.
Spread the word,

The plan is a fully inflatable 2.4 meter long turtle called Niek the Turtle.

Why it is called Niek the turtle?
Niek is the name of my oldest son who had a plush toy as a baby. It is still in his room altho he is now a 15 year old teenager. When I was looking for something to build I saw a tutorial of great kitebuilder Filippo Gallina where Filippo made an inflatable from a model he had of a cartoon whale shark.
link to video: https://youtu.be/wl-_cebG4z8
Filippo was using tape to trace a model. Enlarge it and make an awesome inflatable out of it. Niek loved me to build his turtle "but one thing. Do not take it apart dad!"
So I tried Filippo's method and this is the outcome of me trying to make a template with tape. This is also the reason I give this away for free. This model is not my design. I just reworked it to an inflatable. So here you have

Niek the Turtle. v1.0-b

.Do's
This model is free for everybody to make, enlarge, reduce or give away.
Don'ts.
Sell it at any price more than material costs. So no commercially selling allowed without my aproval!!
I am open for a commercial idea but these plans stay free for real builders to build themselves!

contact Kite builder Freddy Stapersma freddy@stapersma.net

Niek's Turtle

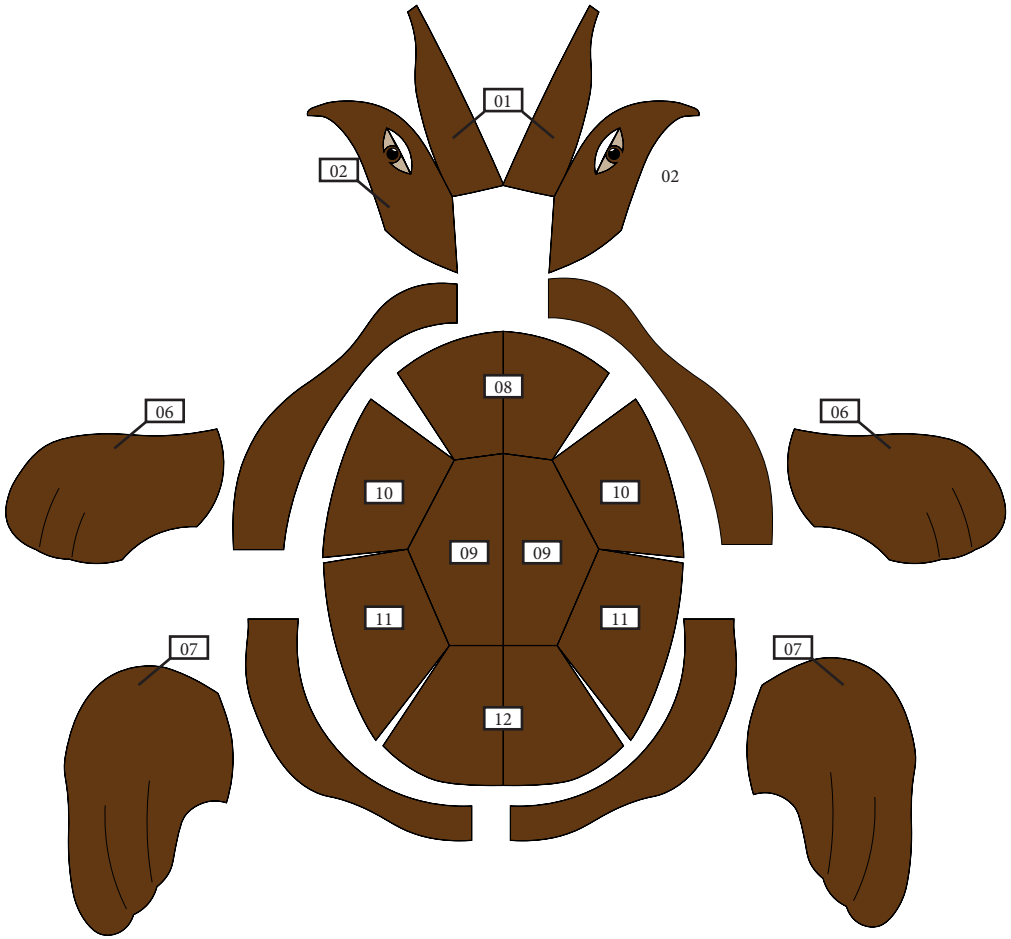
Partslist

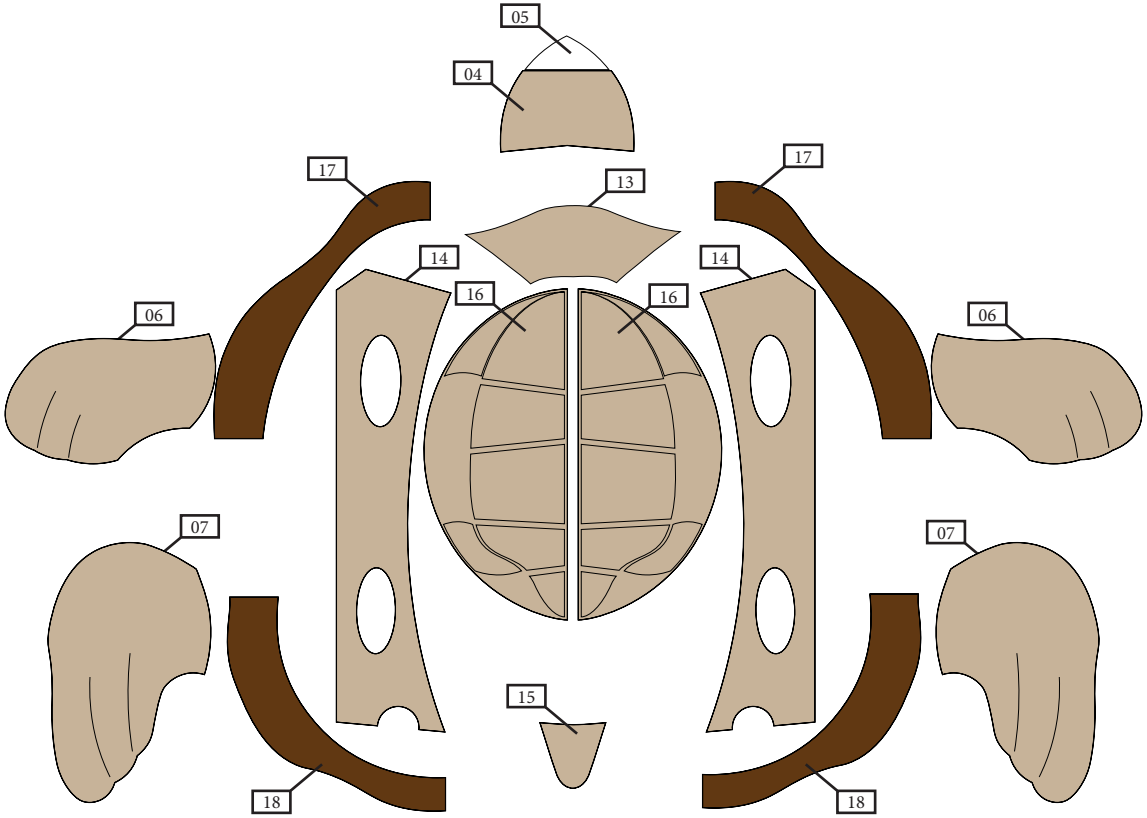
The files

I made template pdf files for every part needed to build the Turtle. The turtle has many different parts wich I tried to give logical names.

Instructions.pdf is this file

other parts are:
01-tophead.pdf
02-sidehead.pdf
03-airflap-b.pdf
04-bottom head-b.pdf
05-gauze-b.pdf
06-frontfin.pdf
07-rearfin.pdf
08-frontshell.pdf
09-topshell.pdf
10-sideshell front.pdf
11-sideshell rear.pdf
12-backshell.pdf
13-sidefront.pdf
14-side.pdf
15-tail.pdf
16-bottom.pdf
17-sideshell front.pdf
18-sideshell rear.pdf
19-eyes.pdf





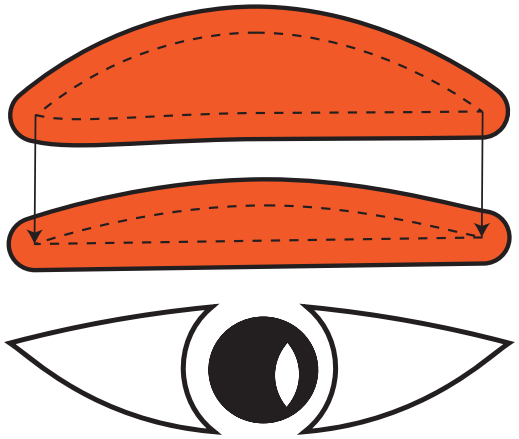
Niek's Turtle

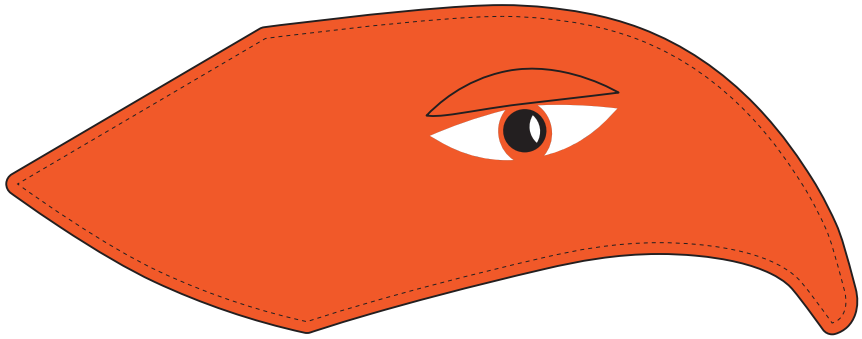
Eyes, tail and head

01-tophead
02-sidehead
15-tail
19-eyes

The eyes

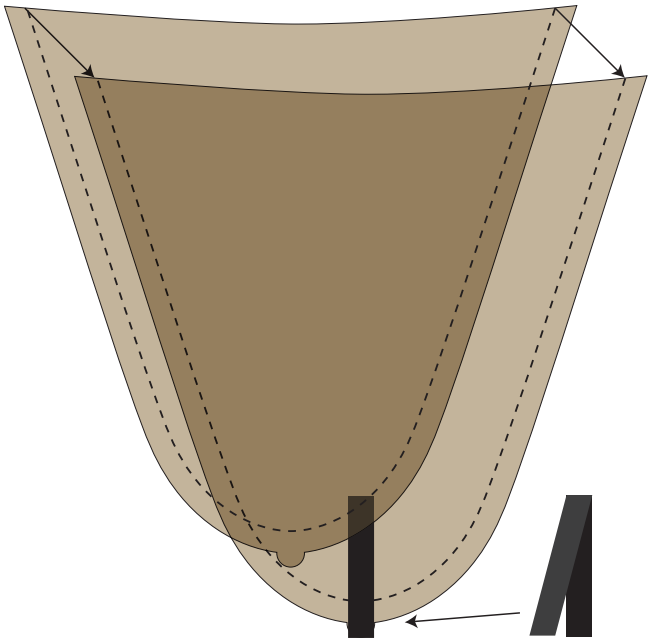
First I started with the eyes and eyebrows.
Sew the two parts of the eyebrows together.
and sew the white eye flash on the pupil.
now sew the parts on the sidehead and cut cut a hole in the side-head where the eyebrows are sewed to let the air in when inflating
Careful to make one normal and one the mirror side.





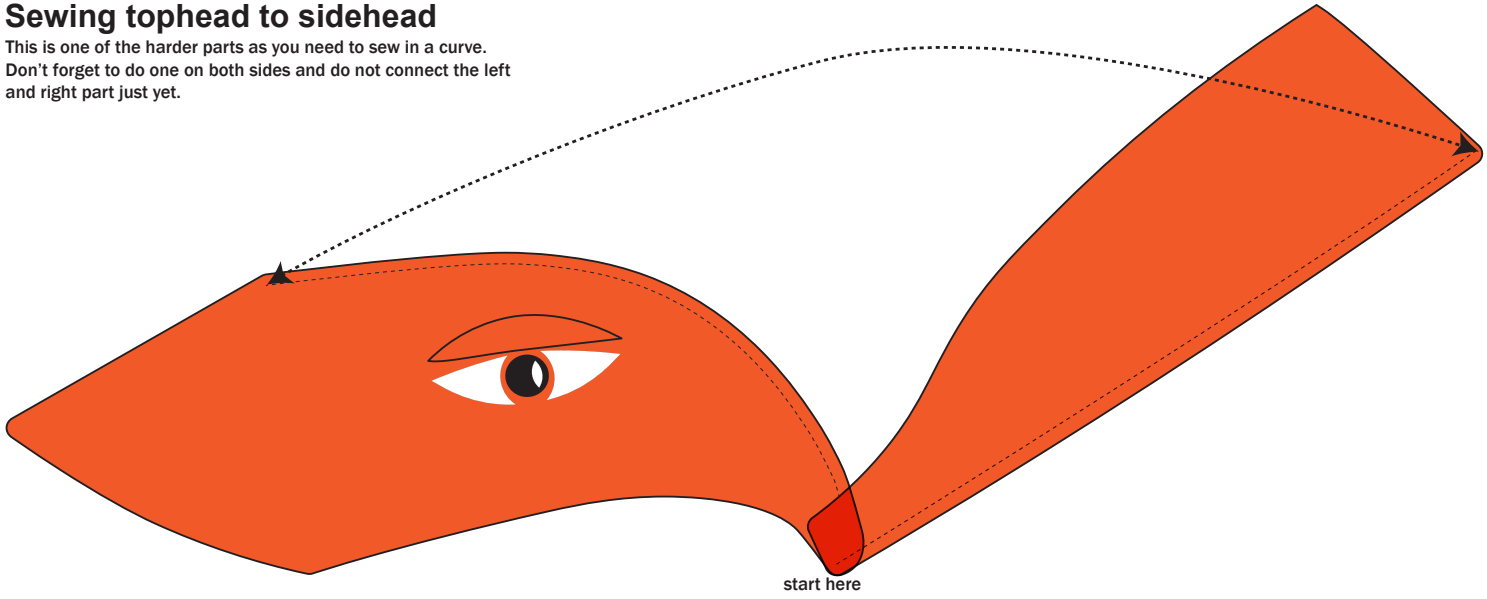
The tail

This is made out of 2 parts that you first sew together and the turn inside out. you can add a ribbon on the bottom (loop on inside) so you can add a drogue later. Make sure you sew the ribbon on securely.



Sewing tophead to sidehead

This is one of the harder parts as you need to sew in a curve. Don't forget to do one on both sides and do not connect the left and right part just yet.



Niek's Turtle

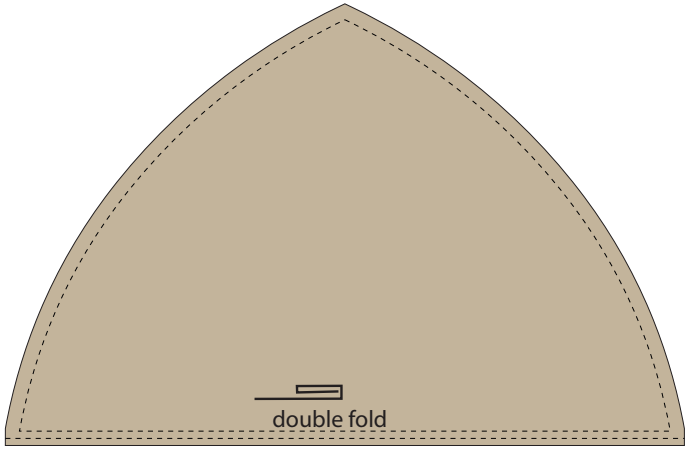
Bottom head

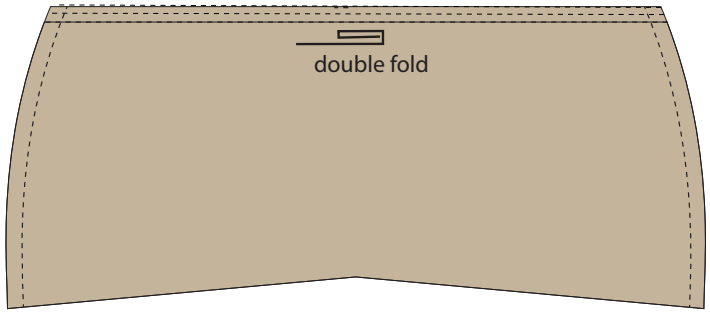
03-airflap-b
04-bottom head-b
05-gauze-b

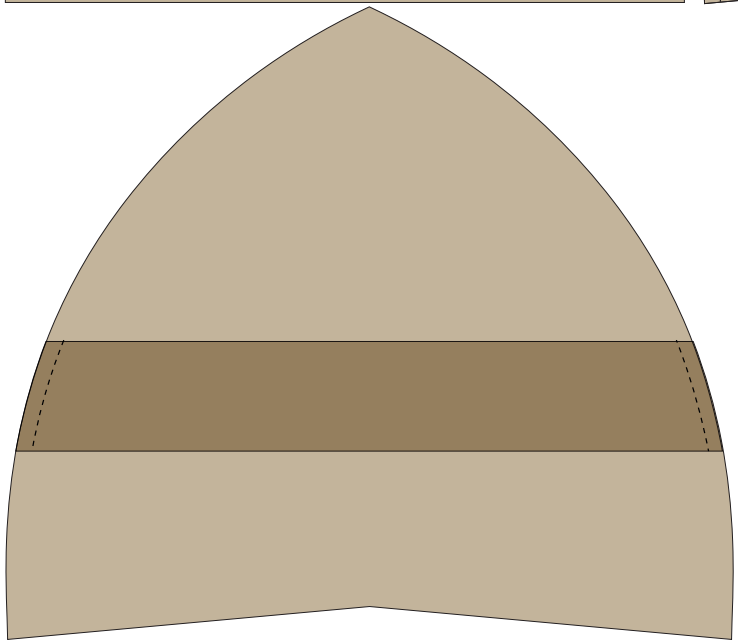
There are two options here one is with a gauze patch and one is without.
The difference is that when you use the gauze you will need a zipper in the figure to get to the internal structure. when you use only the air flap it is not needed (but still handy.)
The bottom of the air flap has got a double fold that keeps the fabric from fraying and gives a little bit of stiffness to the material. Same goes for the bottomhead part. That also got a double fold.
The double fold is 5mm. so you use the full 10mm sewing allowance.

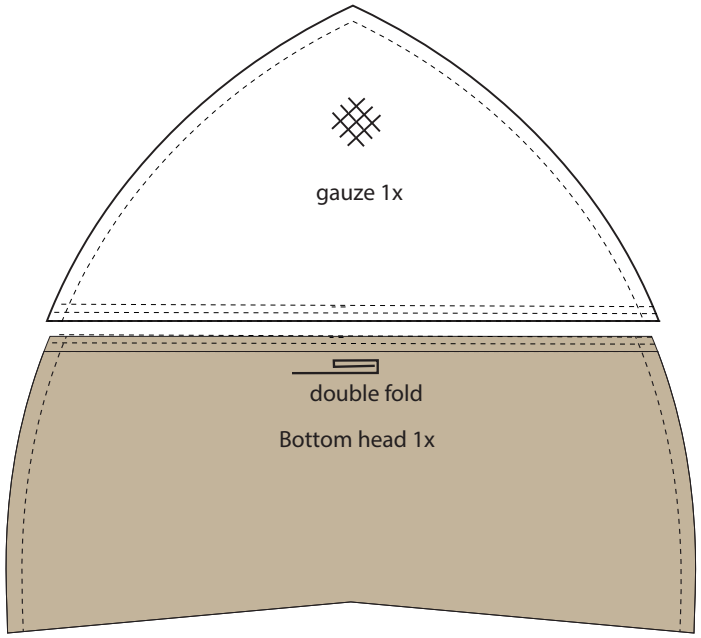
When using the gauze:

Sew the Gauze to the bottom head. use the 10mm sewing allowance to connect it to the bottomhead.
Now you sew the air flap on the backside of the gauze and bottomhead.
Do not sew the back of the air flap on bottomhead.







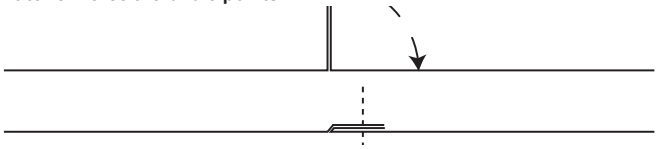


Niek's Turtle

Bottom parts

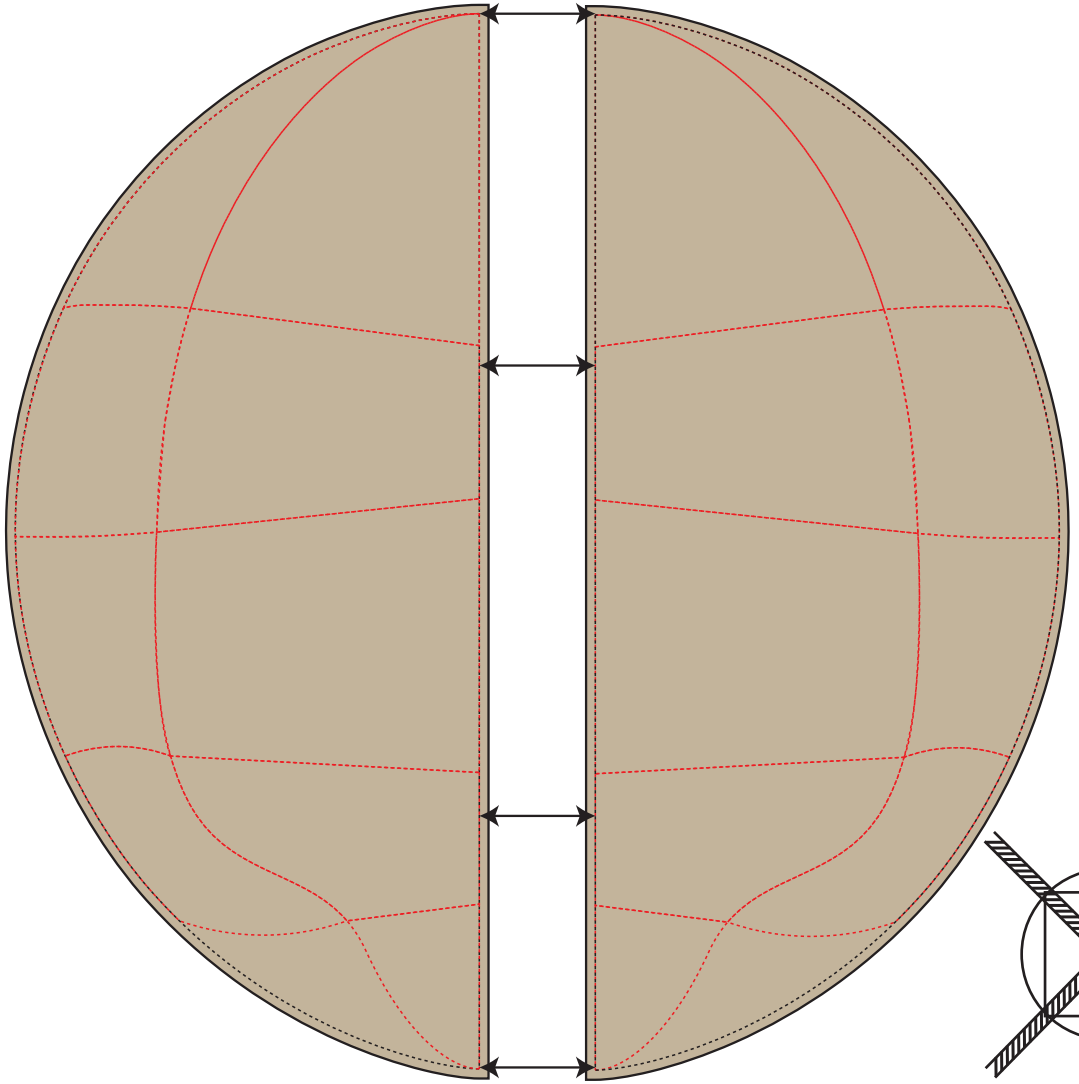
16-bottom
6x reinforcement patches (read for info)

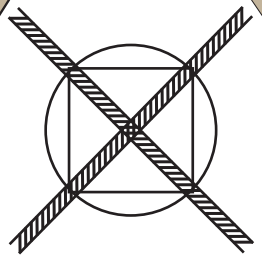
I created 18 reinforcements made from strong fabric like dacron. depenbing on how you want to sew the bottom you make 12 with a bridle cross sewed on it because we need to make an internal structure inside the shell later to keep the turtle in shape when it inflates and use it to reinforce the bridle points.

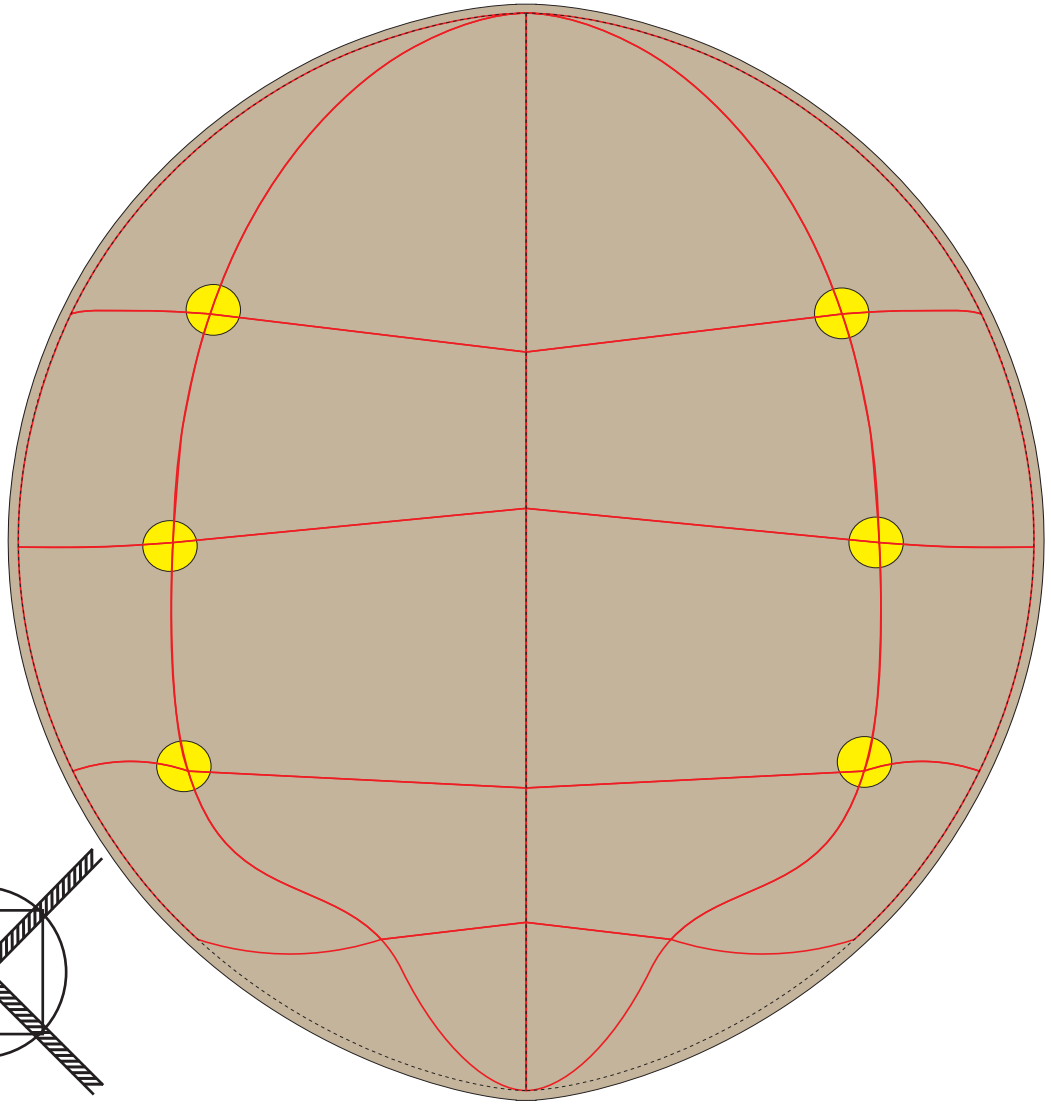


The bottom is made out of 2 parts. After sewing the two parts together I sewed the allowance flat on the fabric and added reinforcements on the crossing lines where I sewed a bridle line on the inside (red line).

You do not have to sew the whole line, you could also choose to put in the reinforcement patches on the corresponding places as we need those to brace the inside of the bottom and top shell.







Niek's Turtle

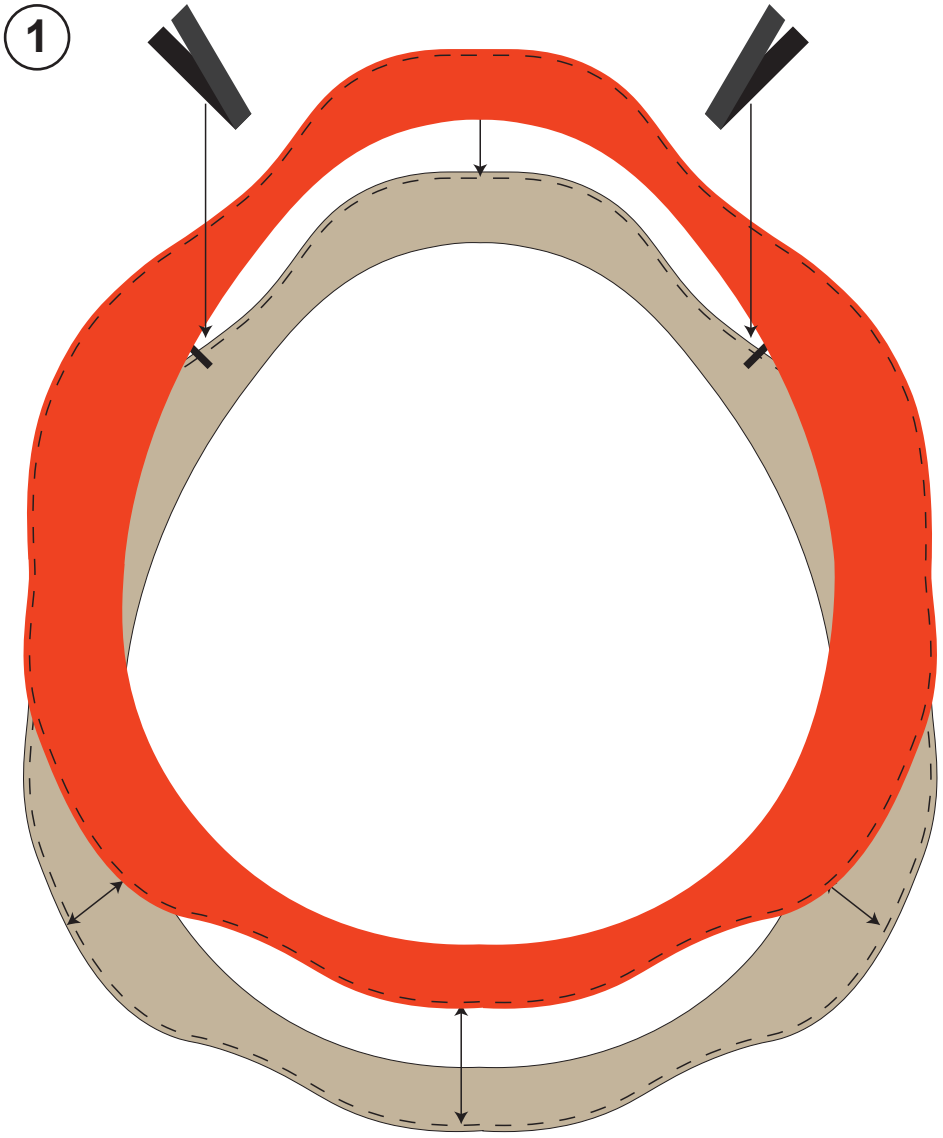
Side Shell

17-sideshell front.pdf
18-sideshell rear.pdf

The Sideparts of the shell are made out of 4 parts per set and you will need two of them: the top (same color as topshell) and the same but in the same color as the underbody.
After that lay them on each other and sew the outside of the both sides together.
After sewing I turned the side shell inside out. so that the sewing allowance is now on the inside.

As reinforcement and to keep the sideshell in shape I glued 12 ribbons with a length of 7 cm. only on the underside of the sideshell so when we connect the finished side parts and the sideshell together they will be sewed too.

1



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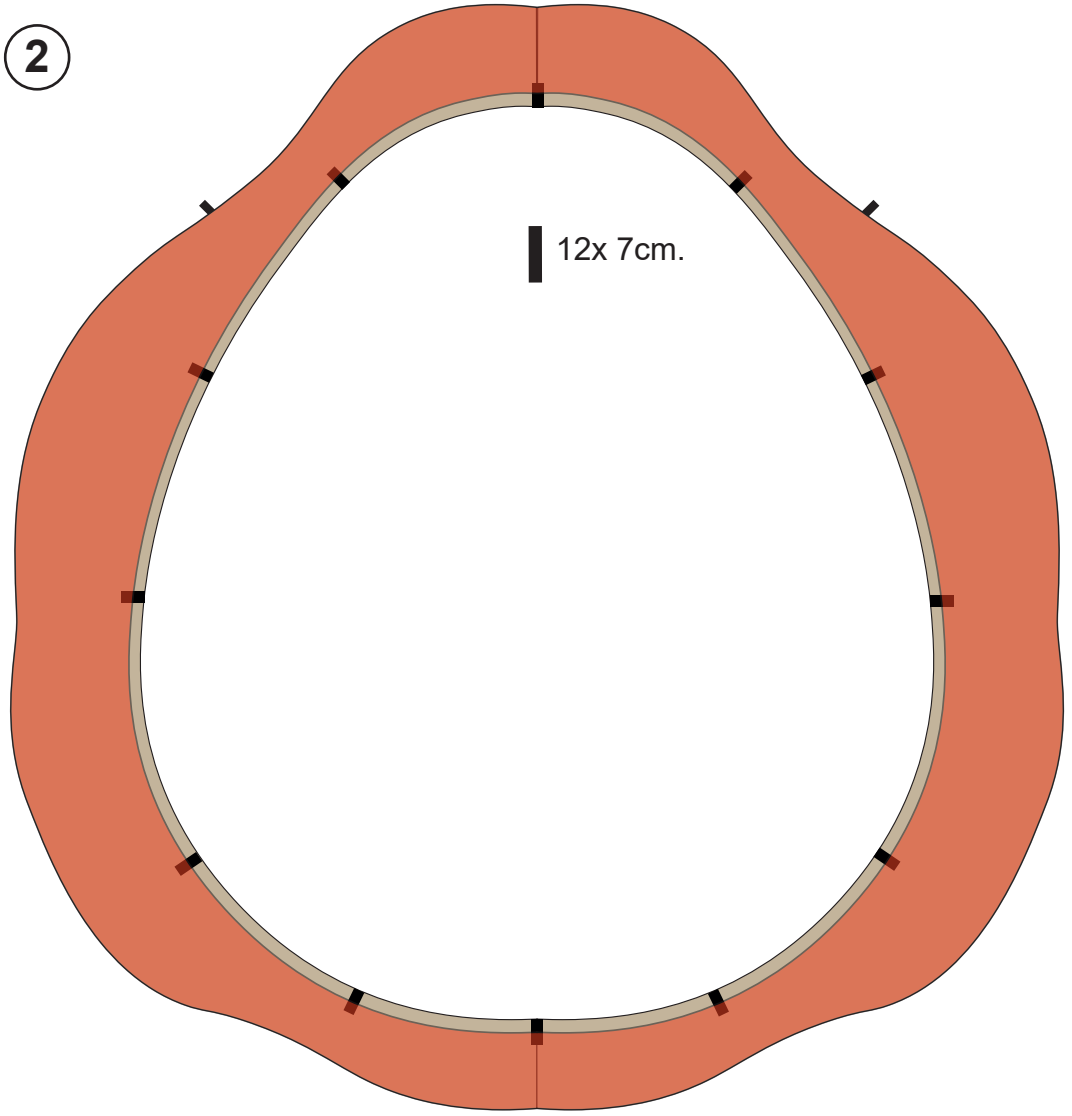


Niek's Turtle

Body side

13-sidefront
14-side
Finished head parts

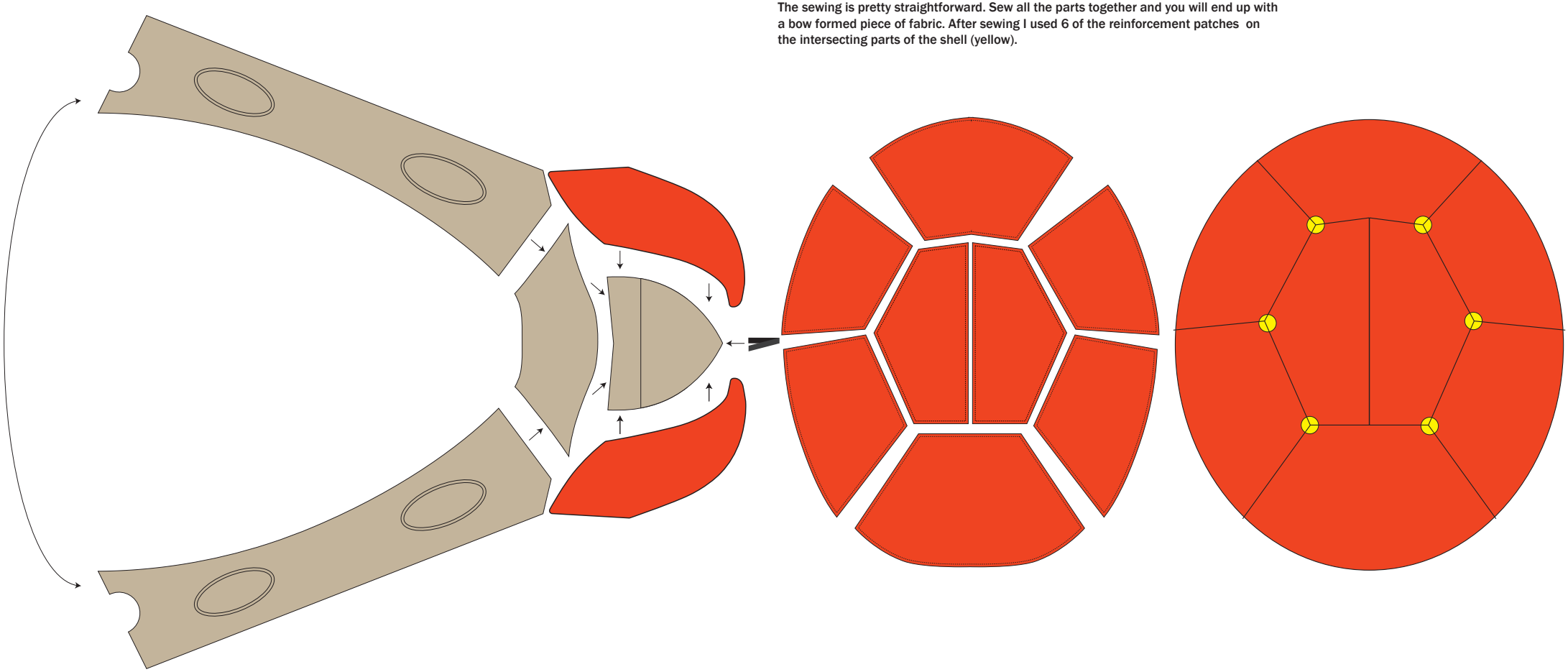
The side of the body is made out of 3 parts. 2 sideparts and the front side part. After sewing thes 3 together you can sew the 2 head parts to the bottom head. and finally sew that part to the sewed side parts.

I sewed a double folded ribbon in the tip of the head to add a bridleline later.

Top shell

08-frontshell
09-topshell
10-sideshell front
11-sideshell rear

For this part you need the 08-frontshell, 09-topshell, 10-sideshell front, 11-sideshell rear, and 12-backshell
you could shoose to make the topshell out of 1 part and not from two parts. I did this because of lack of material.
The sewing is pretty straightforward. Sew all the parts together and you will end up with a bow formed piece of fabric. After sewing I used 6 of the reinforcement patches on the intersecting parts of the shell (yellow).

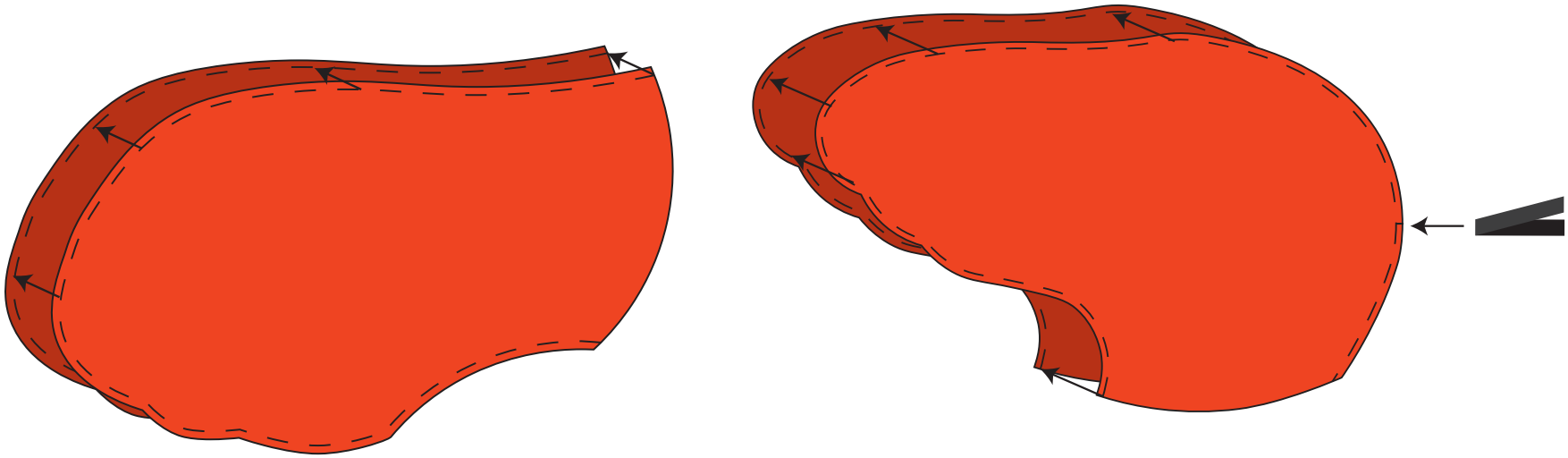


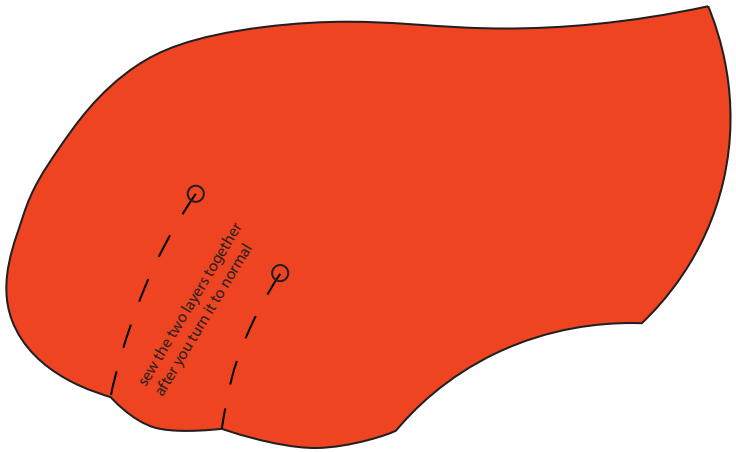
Niek's Turtle

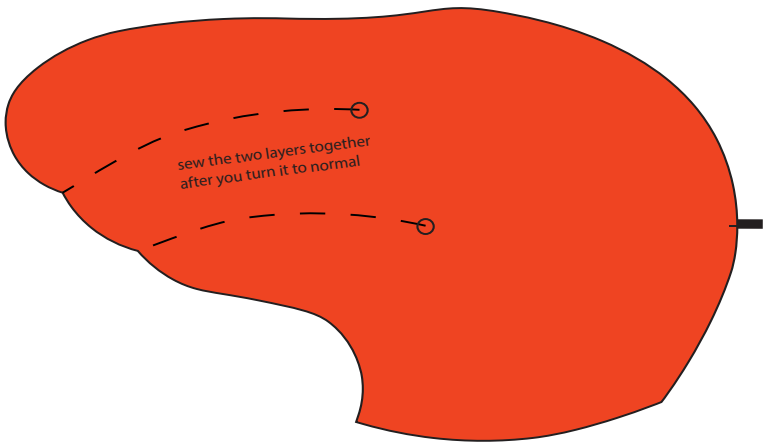
Front and rear fins

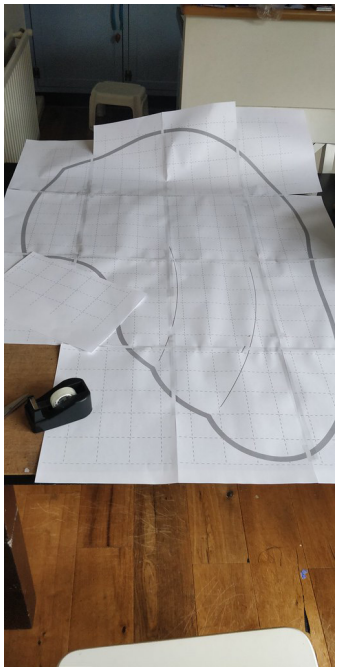
06-frontfin.pdf
07-rearfin.pdf

We have two rear fins and 2 front fins you need to cut 2 normal ones and two in mirror for both of them.
I sewed them inside out and of course let the part that connects to the side open.
After I sewed both of them I turned them to normal and draw the fingers part on the material.
then I stitched the line.
(it is a good idea to make a small reinforcement at the end as there will be the most tension.)







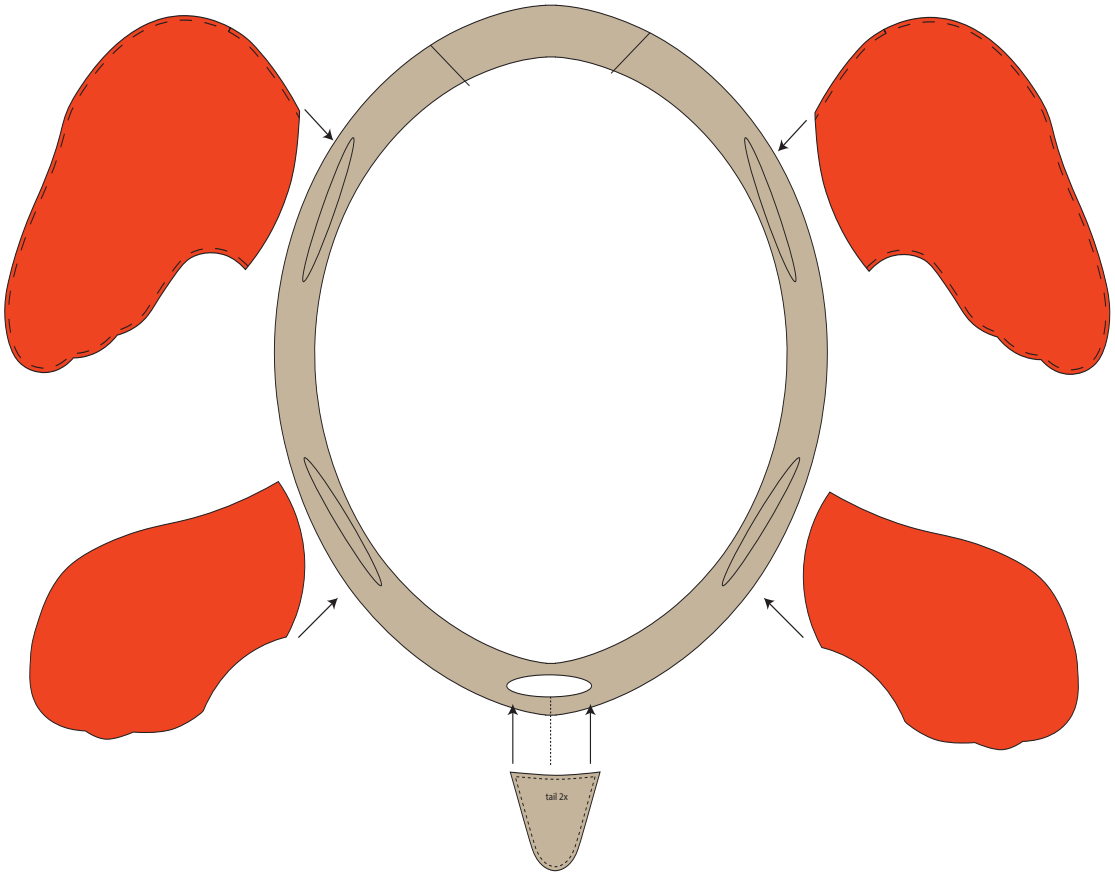


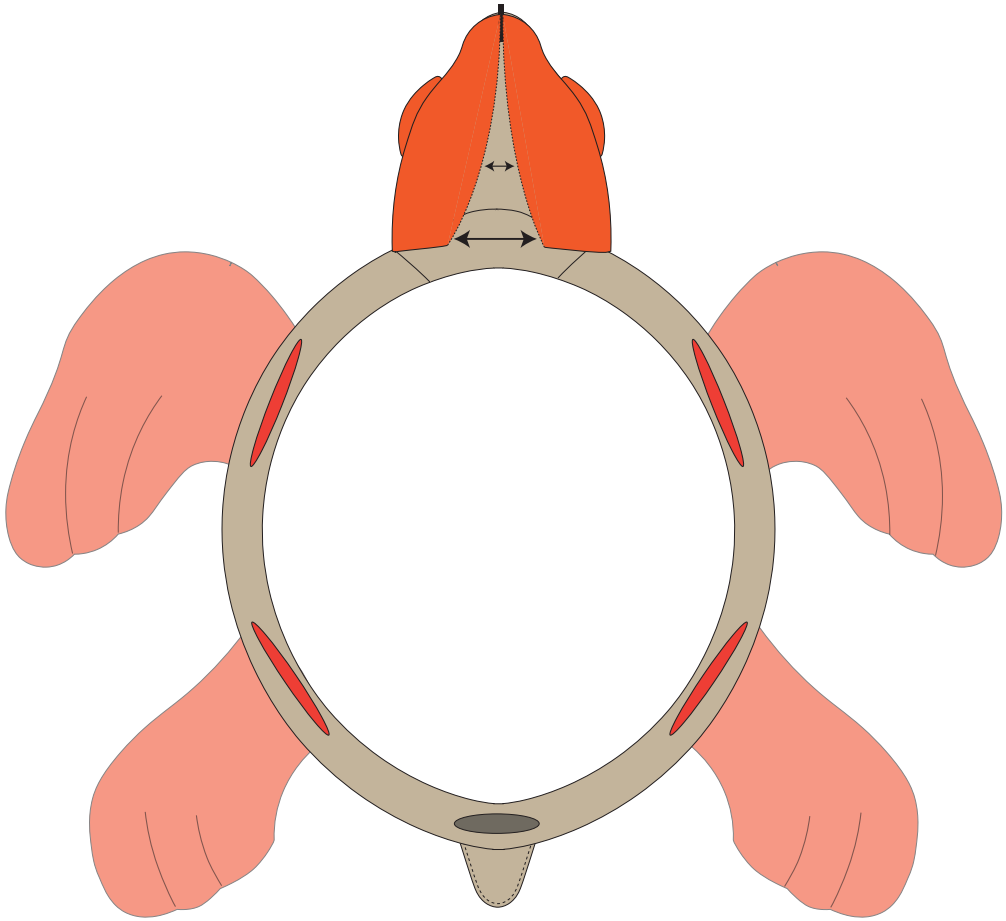
Adding the fins

Finished Frontfin.
Finished Rearfin.
Finished Tail.
Finished Sideparts
Finished Head

fins and the tail:
fold the sewing allowance of the fin to the inside and sew the fins on the finished side parts from step 7.
After sewing the fins on the side make holes in the fabric to let the air in..

closing the head.
turn the head inside out and sew the head together





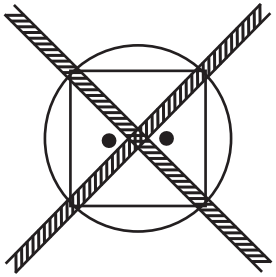
Niek's Turtle

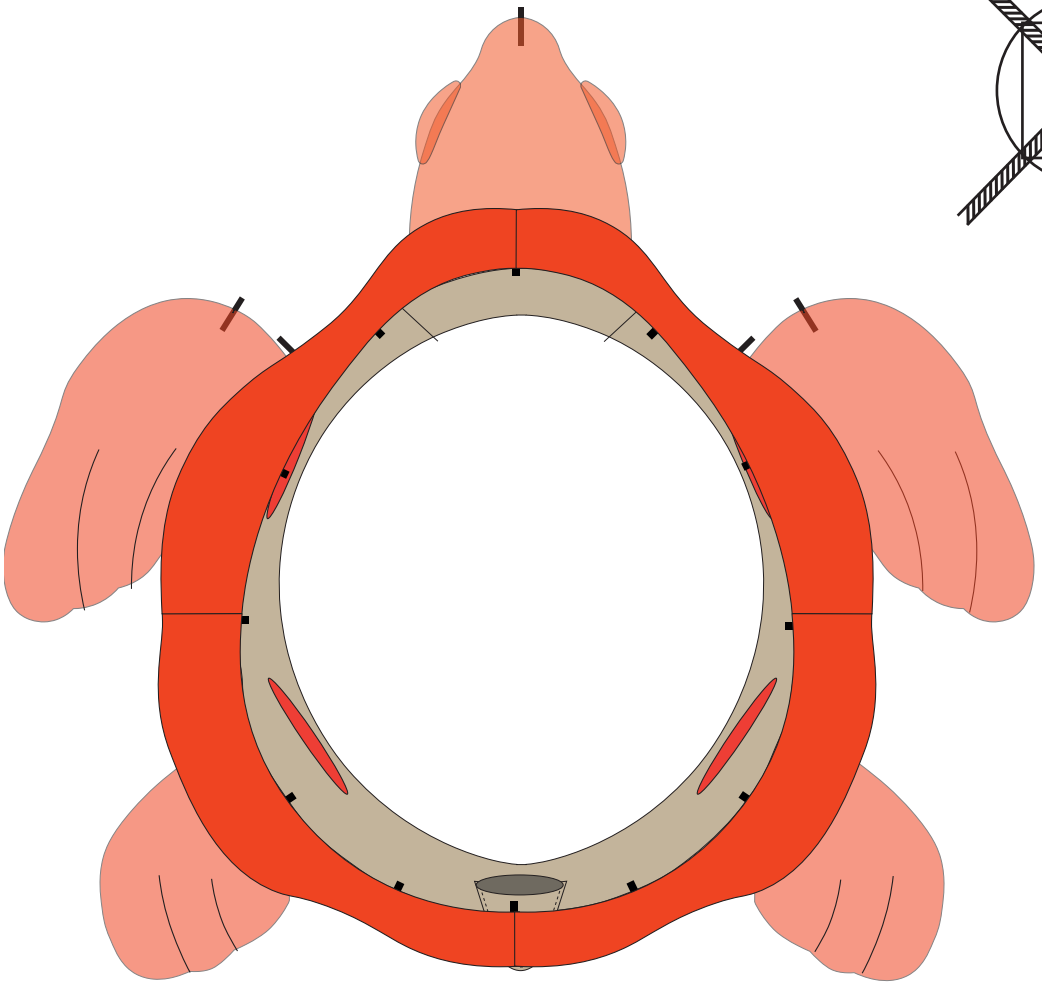
Top shell

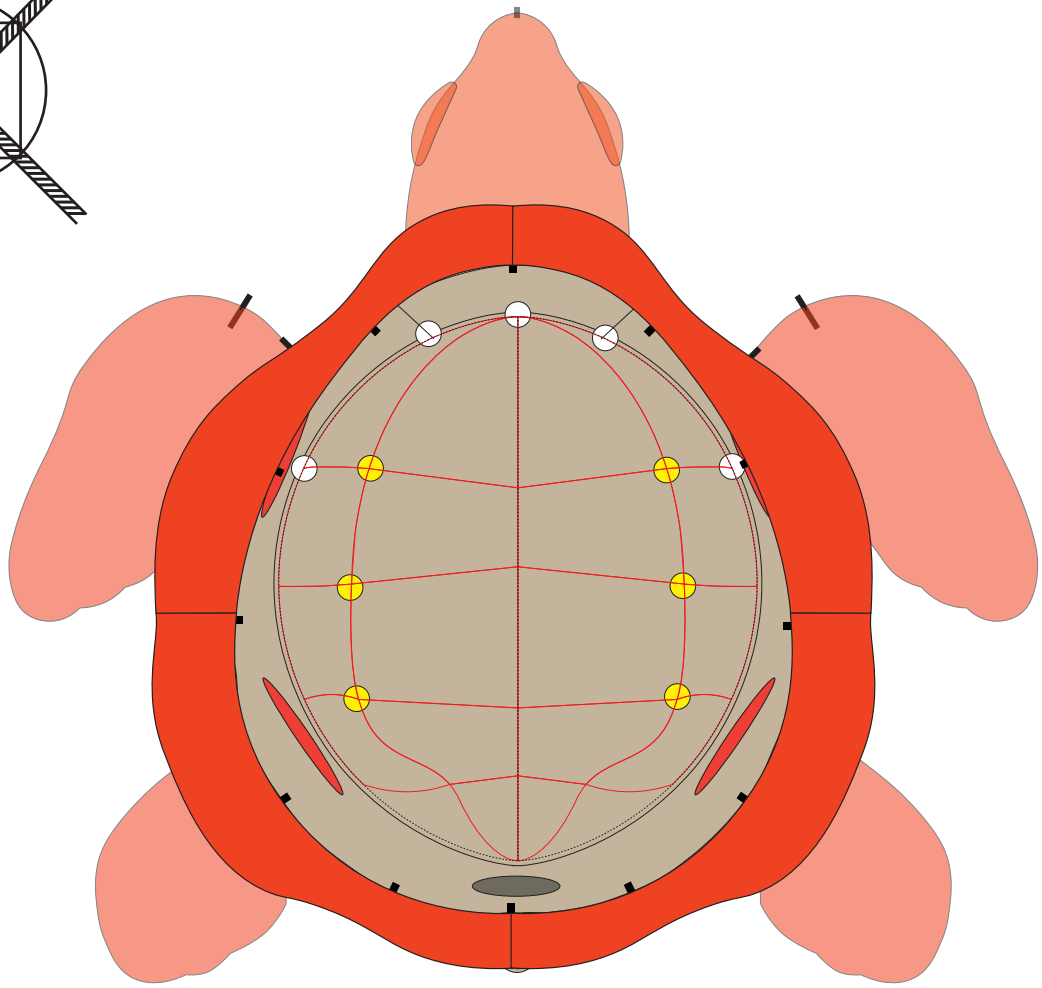
Finished sideparts
Finished sideshell
Finished bottom
5x reinforcement patches

Sew the finished sideparts to the sideshell.
What I did was add a zipper between the sideshell and the finished sideparts for fast deflation and easy access later.
I made it on the front side between the head and finished sideparts.

To sew the bottom I turned the whole thing inside out. Sewed the bottom in place and added a few extra reinforcement patches (the white ones). These will be used later for the bridle.It might be a good idea to punshe the holes upfront.







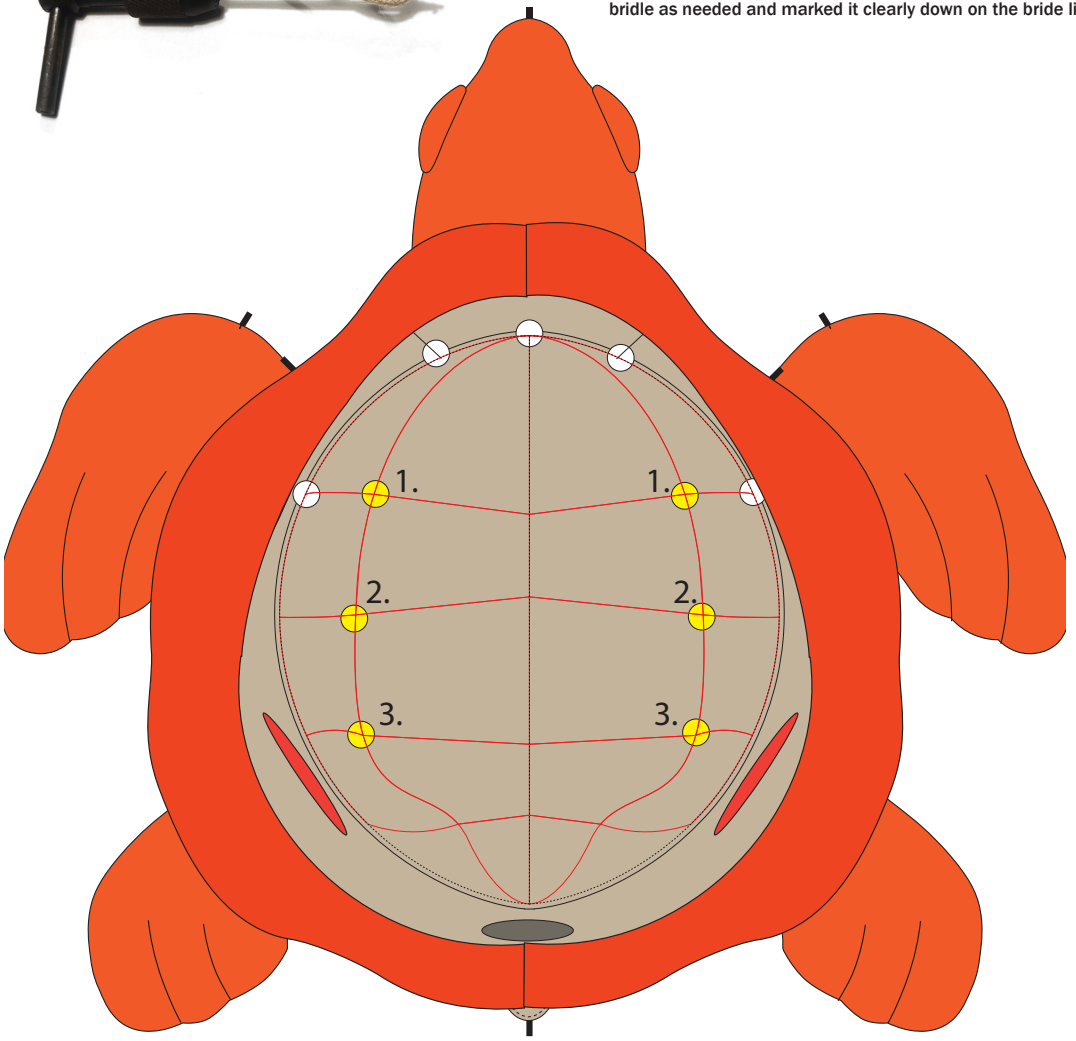
Niek's Turtle

reinforcement bridle

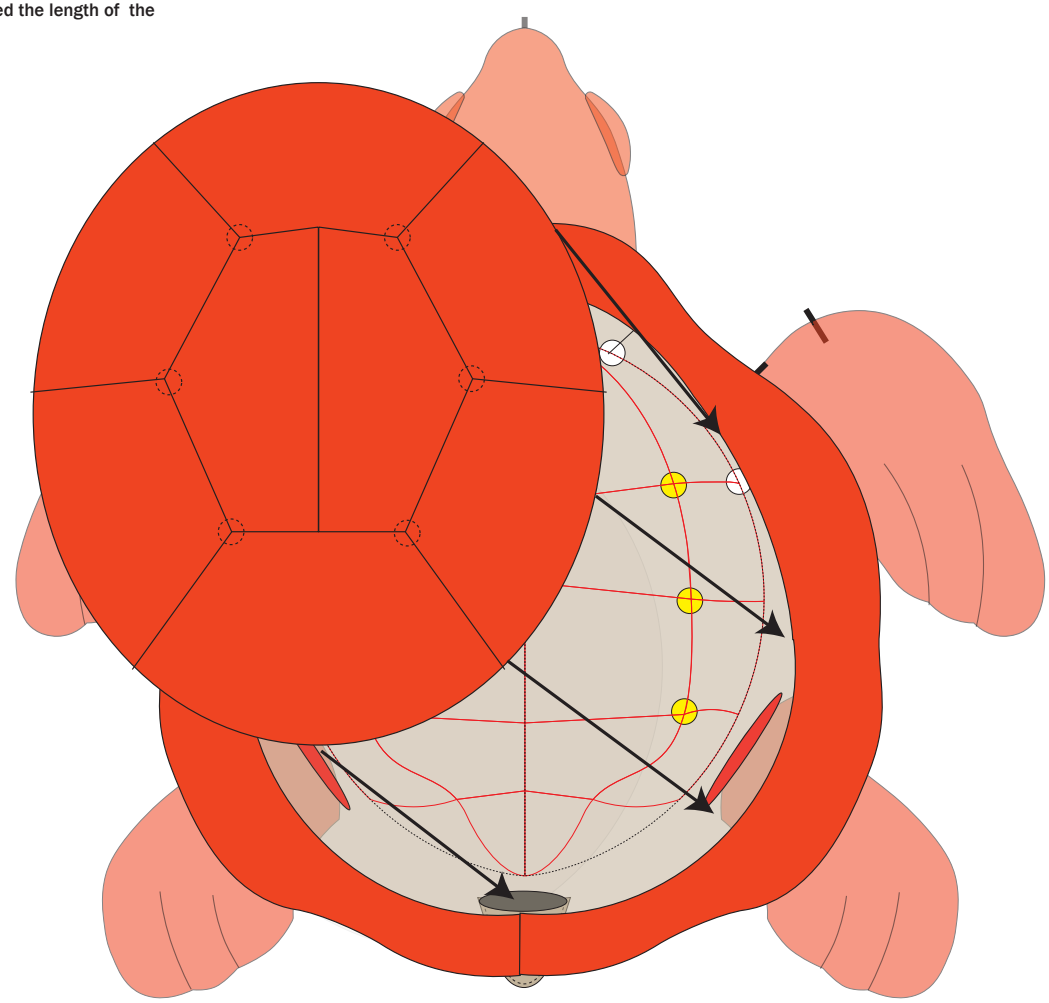
6x dacron bridle line 2x 800mm 4x 820mm
Bridletool

Start of the reinforcement bridles
The bottom and top shell have 6 lines that connect them to each other. I find it handy to start now with the lines that will need to be added to the bottom. (on the yellow patches)I use a bridletool for that.
I used 60 kg dacron line for these internal bridlelines
Line 1. = 650mm. Line 2. and 3 are 670mm. (Excluding knots!!!)
What I normally do is use around 15cm extra for the bridle as the actual length needed. After cutting the internal bridle in length I burn the edges to stop fraying and on one side already make a stopper knot. so 1 = 800mm and line 2. and 3. ARE 820

What I also like upfront is to do is punch all the holes in the reinforcement patches. Now you punch the bridle from the inside to the outside and on the other side of the reinforcement back in. Now you can tie this line down and use the stopper now where it is used for. As a stopper. When you did all six of them I measured the length of the bridle as needed and marked it clearly down on the bride line.



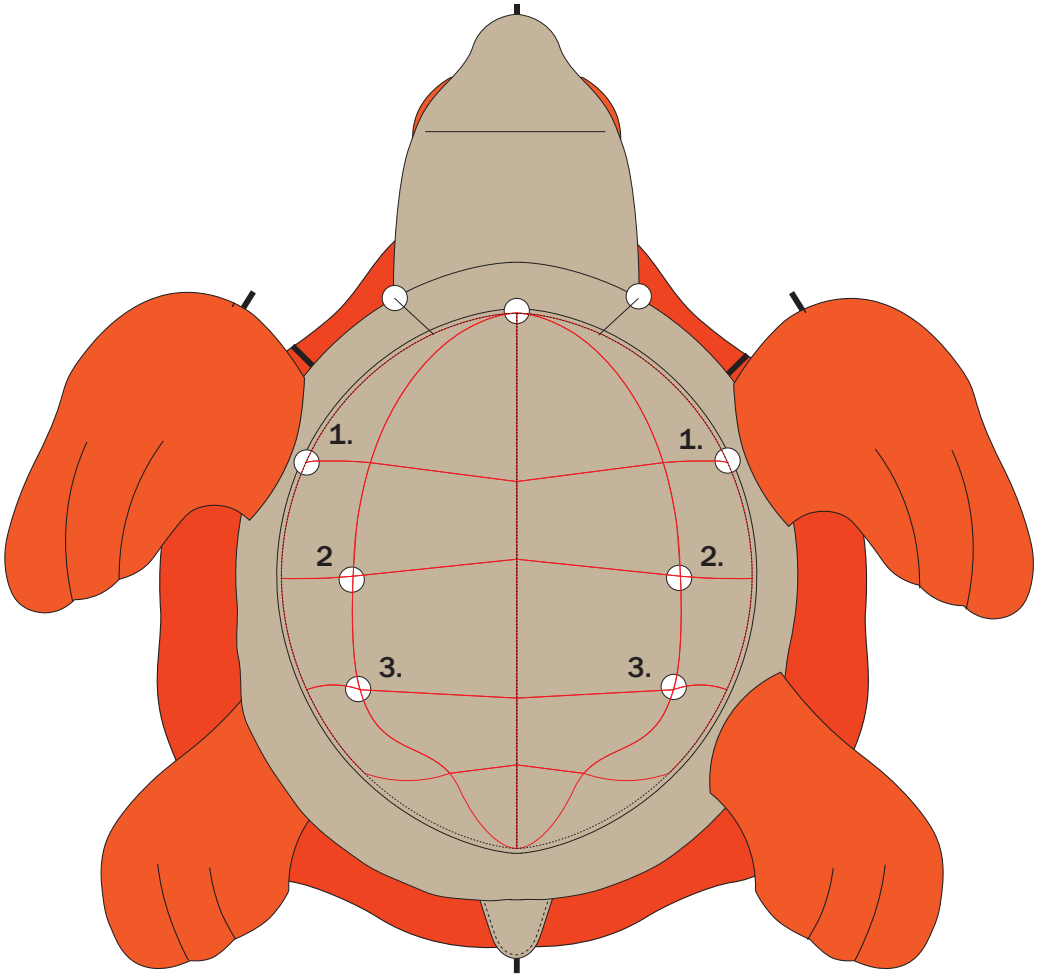
adding the topshell
We are now at the point where we close the turtle.
Turn the whole turtle inside out.
I first glued the 12 ribbons on the top part of the sideshell.and then sewed everything together. The whole thing is now closed.
Turn everything back to normal through the zipper or if you did not use the gauze through the mouth part.

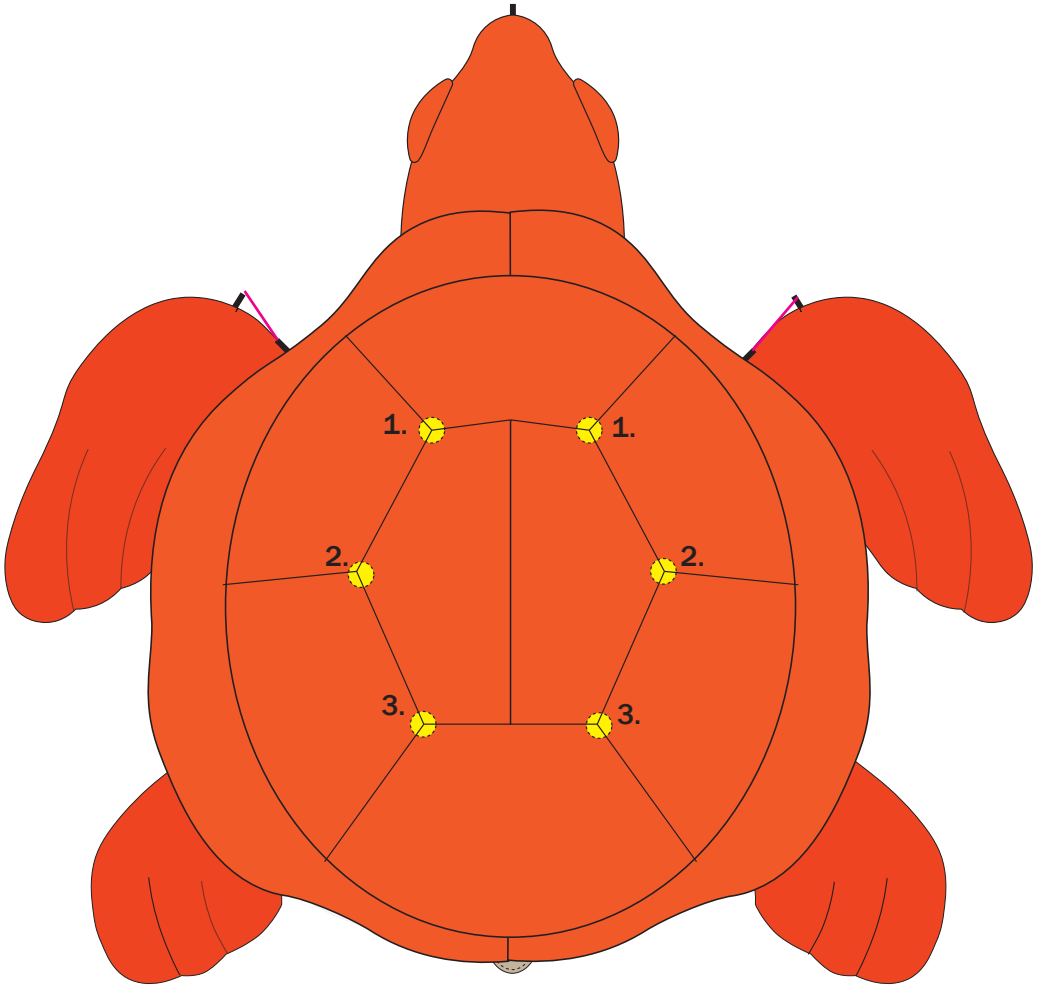


Niek's Turtle

connect internal bridles

to connect the internal bridles you should punch the bridle from inside to outside and back.
if you marked the length you can now tie them off at the length needed and make a stopper knot at the end.





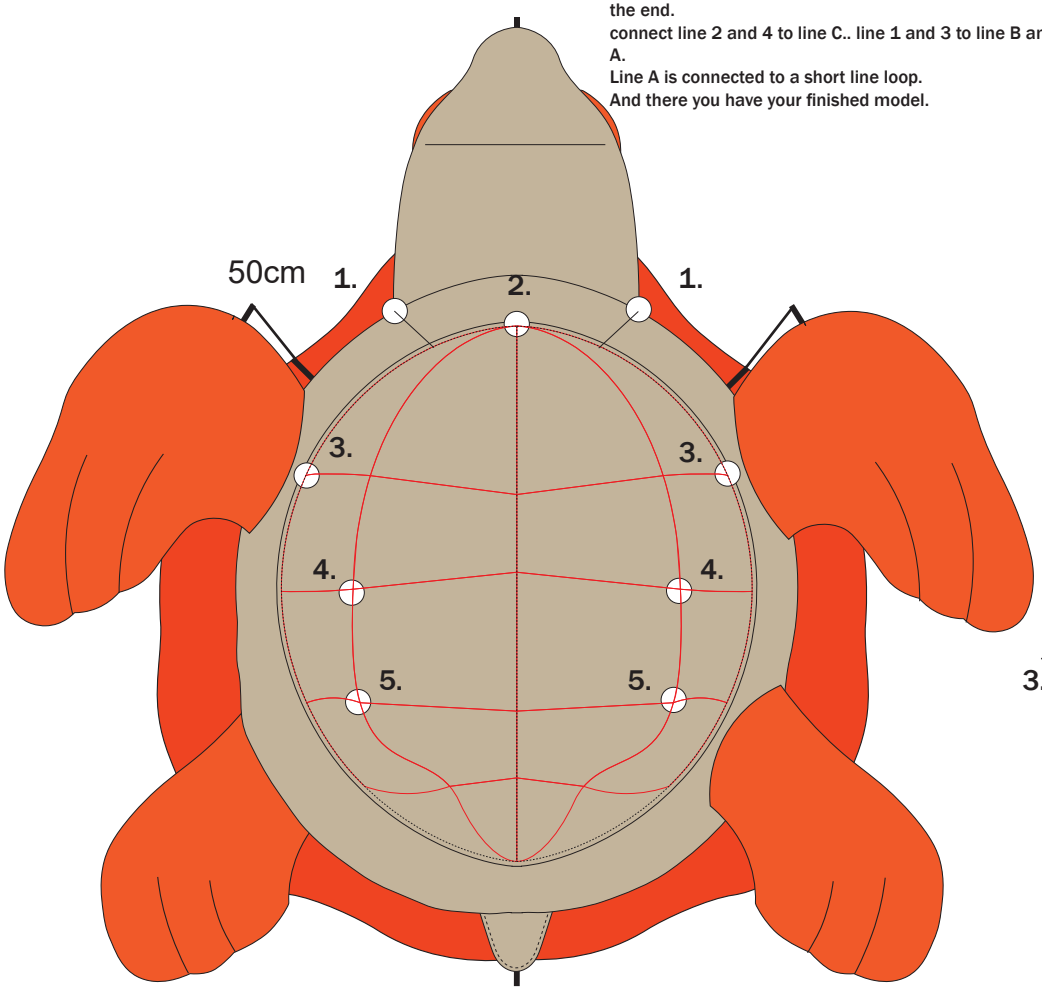
Niek's Turtle

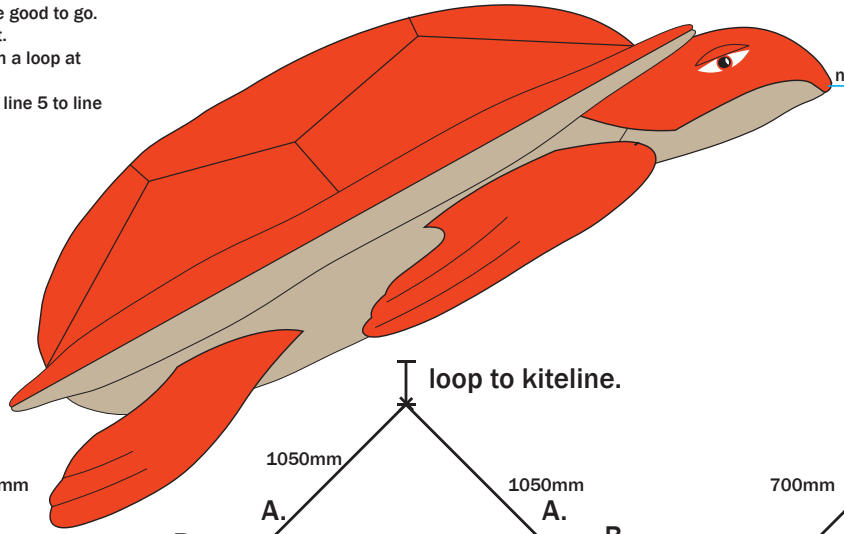
Bridles

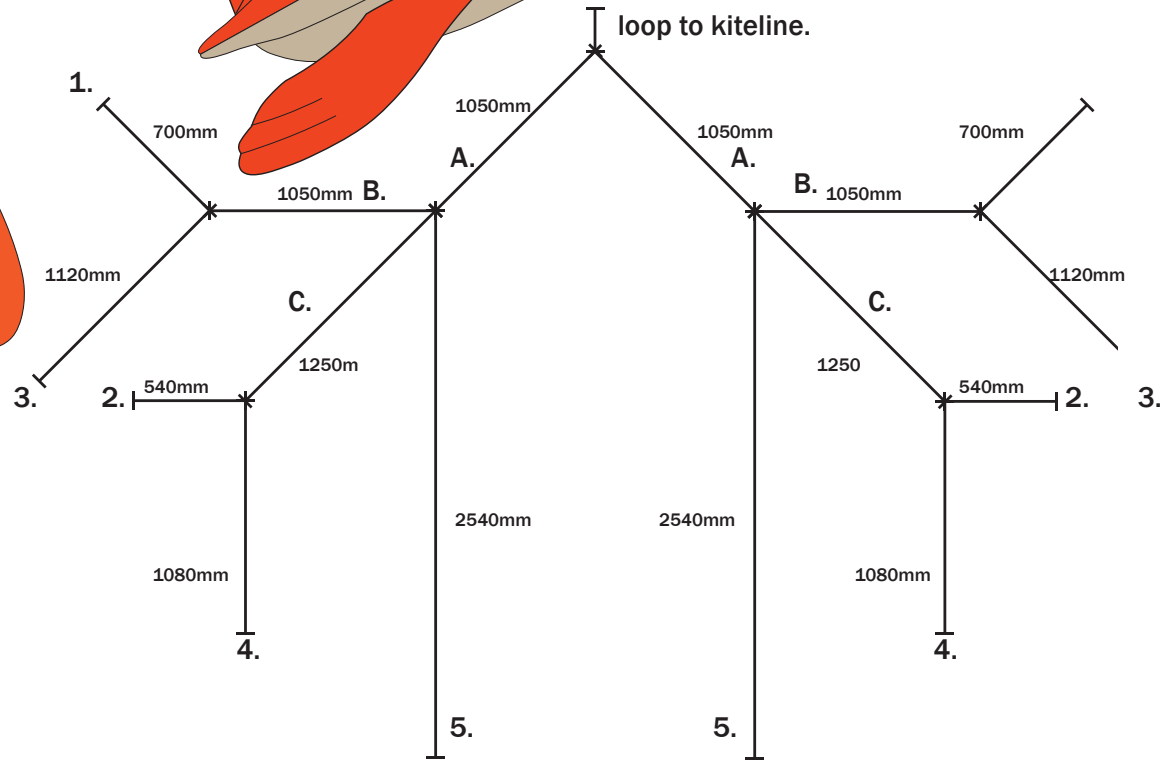
Bridlework
to connect the internal bridles you should punch the bridle from inside to outside and back.
if you marked the length you can now tie them off at the length needed and make a stopper knot at the end.
The length of the bridles here are including the loop.
What I normally do is make the bridles a bit longer, say 15cm. longer including the loop. so I have enough length to make changes if needed.
I always work from the inside to the outside. and always end with a loop. so start at the body and work your way to the end.
Make all the loops the same size. mark the length of the bridle and we are good to go.
For this model I also used a 60kg dacron and found no problems with that.
I first connected all lines to the inflatable now you have a lot of bridles with a loop at the end.
connect line 2 and 4 to line C.. line 1 and 3 to line B and then line C,B and line 5 to line A.
Line A is connected to a short line loop.
And there you have your finished model.

All you need now is to build a drogue to put behind the turtle.
I made an inflatable Jellyfish but will not share that plan because it looks too much like a commercial plan that is available. Mine is 60cm in width.

Now is this all?? well maybe. because there is one thing left.
You know it can fly as a kite too?? YES!!!!!
When the turtle is fully inflated you can fly it on its own.
What I did was add a line from the head to the short loop and it flew nicely in moderate wind.
Have fun trying this out yourself!!







Niek's Turtle

This is the end of the second gift. take care everybody and KEEP BUILDING!!

Regards, Freddy (and greetings from Niek!)