

## Sewing machine settings

I used a Singer 4423 Heavy Duty Sewing Machine to sew the straps onto the harnesses. I recommend using heavy-duty needles (size 110/18), especially when you want to sew the buckle straps.

**Stitch:** I used double straight stretch stitches (= = =) for everything. At the time I'm writing this, I haven't heard of any of the stitches on the harnesses fraying.

**Width:** 0

**Length:** 1.5 - 2

**Tension:** Might vary with the machine, but I usually set mine as high as possible; otherwise, the thread will bird nest under the fabric.

**Color:** I used black thread because it matches the harness and Velcro straps.

**Other materials:** For cutting seams, I'd recommend using a small pair of scissors with a micro-top (example: [https://www.amazon.com/Westcott-Straight-Titanium-Bonded-Scissors/dp/B072RV8SC7/ref=zg\\_bs\\_g\\_689392011\\_scc1\\_18/131-8358011-9161764?th=1](https://www.amazon.com/Westcott-Straight-Titanium-Bonded-Scissors/dp/B072RV8SC7/ref=zg_bs_g_689392011_scc1_18/131-8358011-9161764?th=1)). It requires less effort than the seam rippers that come with every sewing kit.

### 1. Cutting out the baby holder

Use scissors to snip out the baby-holding part of the harness. **Make sure you don't cut the parts of the harness behind it.**



### 2. Removing the buckle straps

We're going to remove the buckle straps on the front of the harness by cutting the seams and not the straps. We'll later re-sew them to the other side of the pads (the side that touches the wearer), going sideways instead of up and down.

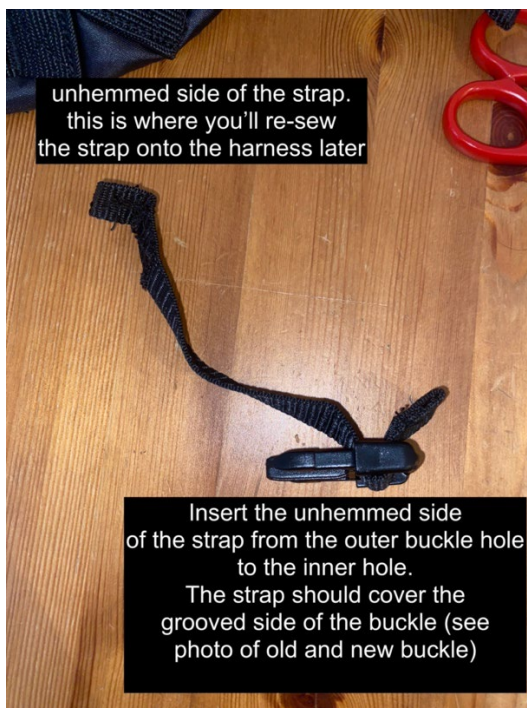


For this part, you can use a seam ripper or small fabric scissors. The best place to start is the zigzag seam on the other side, as your seam ripper/scissors can easily cut through the middle of the seam. Once that's done, the seams on the other side are easier to expose. Cut through the seams (and maybe flip back and forth between sides) to fully remove the straps.





To replace the buckles, you can just slide the original ones out and replace them with the new ones whose straps will fit through the sensor.



### 3. Sewing the Velcro straps

For this part, I'd recommend either having someone wear the harness to measure the required strap length. If you don't have a willing model, you can also lay the harness flat on a table and take the measurements that way. The straps should be a little bit long to give some slack when someone wears the harness.

I start with the bottom-most strap, which will be above the horizontal pad/strap of the harness itself. I like to align the middle of the Velcro strap with the fabric hoops (circled in red) on the harness, and here, the strap is about 6.75" long:



**Tip on sewing the Velcro straps :**

- For the first side of the strap (doesn't matter which), your starting position will be on the inner edge of the harness, since the "forward" direction of the sewing machine will move the garment/harness away from you.
- I like to have very little clearance between the seam and the edge of the strap (left photo).
- Usually, about an inch into the seam, I do a reverse stitch so that this part of the seam, which will see the most tension when the harness is used, is extra secure.
- I then sew once over the strap, ending at the opposite side of where I started the seam. I don't usually sew back to where I started (right photo), but it's up to you. Regardless, when you end your seam, you should do a forward-reverse-forward like you did at the start.





Sewing very close to the edge



See how I don't completely finish the seam

Repeat the process for the other side of the Velcro strap.

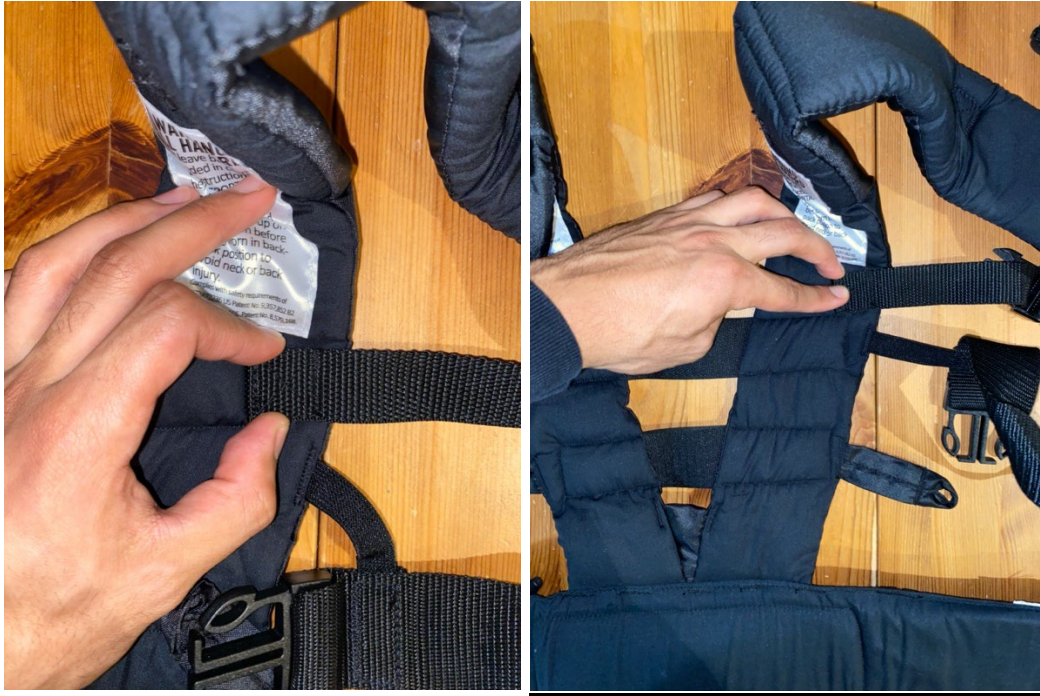
**Second strap:** The next strap is aligned with the thin middle straps on the harness and measures about 8" in this example:



Repeat the same things you did for the first strap.

**Re-sewing the buckle straps (probably the trickiest part of the whole process):**

You will re-sew the free end of the buckle strap onto the back side of the harness (the one with the white Warning label), as close to the outer edge of the harness as you like. The two photos below show where I like to sew them:



For both straps, I also like to keep the folded part tucked inside the seam.

The next two photos show 1) the starting point for the seam and 2) the entire path for the seam. I like to make the same X shape along the folded part of the strap, and then double over on the left and right sides for extra security.



Starting point

Sewing path for buckle straps



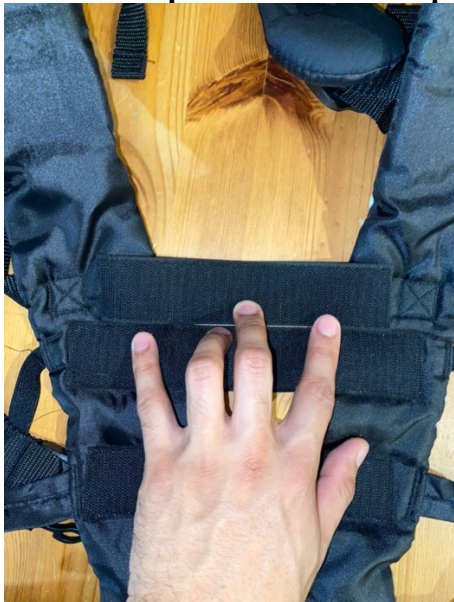
Here's what the end results for the buckle straps should look like:



The buckle teeth should be pointing in front of you when you wear the harness; if they don't, you messed up.

### **Third strap in-between buckles – measures about 6.25"**

We'll position the third Velcro strap in between where we re-sewed the buckles. **Don't sew the Velcro on top of the buckle straps; even heavy-duty needles will break.**



Once again, repeat the same steps for the first two Velcro straps.

**Fourth and final strap – measures about 8.5”**



Repeat the sewing steps.

**COMPLETE:**



**Final note:** You might have noticed or felt that the harness above the last strap has thicker padding than the parts we sewed the Velcro and buckle straps onto. I would not recommend trying to sew any Velcro straps on these thicker parts.