**Intro: DIY heated belt**

I have long wanted to make a small and comfortable, inconspicuous heat source that could use both at home and on the bus or in the office. It should be operated from any source of energy, consume very little power and long run on batteries. It should have a heat regulation. It should be very simple to make and very inexpensive cost...

The result is a heated belt.

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**Step 1:**

For my waist took 0.9 meter (3 foot) of carbon tape 44 mm, a small strip of black and white fabric, one button, one meter ultra flexible cable with silicone insulation, female plug 5.5 mm with wire.

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**Step 2:**

I cut four strips 10 cm wide of some inexpensive white fabric. Three stripes stitched together. Then sewed them with carbon tape. Top will be sewed with the remaining fourth strip of fabric. The result will be a sandwich: three layers of fabric + carbon tape + one layer of fabric. The meaning of this is that I can put the belt on one side, if I'm cold or the other, if not very cold.

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[http://www.instructables.com/id/DIY-heated-belt/]
Step 3:
Know from experience that a carbon tape will last for many years, but a bad wire may break off in a month. I recommend using ultra flexible wire with silicone insulation. For example AWG18 150 strands x 0.08 mm.
You should sew some contacts to the carbon tape. Very convenient to take the wire mesh of any video cable. This mesh will be very good as a contact.

Step 4:
Take a piece of mesh wire and sew it by a sewing machine or by hand. Such contact is soft and can resist to repeated bending. Solder the wire to the edge of the mesh.
Step 5:
Bent edge of white strips and sewed up, so that they form a channel for wire.
Top sewed the remaining fourth strip of white fabric.
Button glued with hot glue stick.
Step 6:
Now you can sew a nice black cloth and Velcro. Heated belt ready.

Step 7:
At 12-volt the current is 1.6 Amp, it's about 19 watts of heat. Belt can be powered by three 18650 batteries connected in series. If you use a good modern batteries 3400 mA / h, such as this one, the battery life will be longer than two hours and it weighs only 150 grams! The battery pack is attached to the belt with Velcro. If desired, it can detach and put in your pocket. Switch button is on the belt. I use battery power when I go to the bus to work, or when I go shopping.

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Step 8:
When I’m working with a computer at home or the office, I put the battery on charge and connect the belt to the power supply from any laptop or other device. You can use almost any adapter, as the belt consumes little energy. It is very convenient because it doesn’t need to buy and carry a special power supply. All this is possible through the use of small and low-cost dimmer. It has the same contacts 5, 5 mm and I can supply power through it if necessary. Dimmer allows you to use any adapter from 12 to 24 volts and make the desired temperature.
Step 9:
Thanks Velcro carbon heated belt can put a small child and a large adult. Especially it helps when you have a long time to sit in a cold bus or in the office. Sometimes I wear it when watching TV at home. My father likes to wear the belt if he had a sore back.
Strap is comfortable to wear, you can just put it in the morning and forget about it, but if it gets cold, simply click on the button.
It's very cold now, and sometimes I wear it instead of a scarf:

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