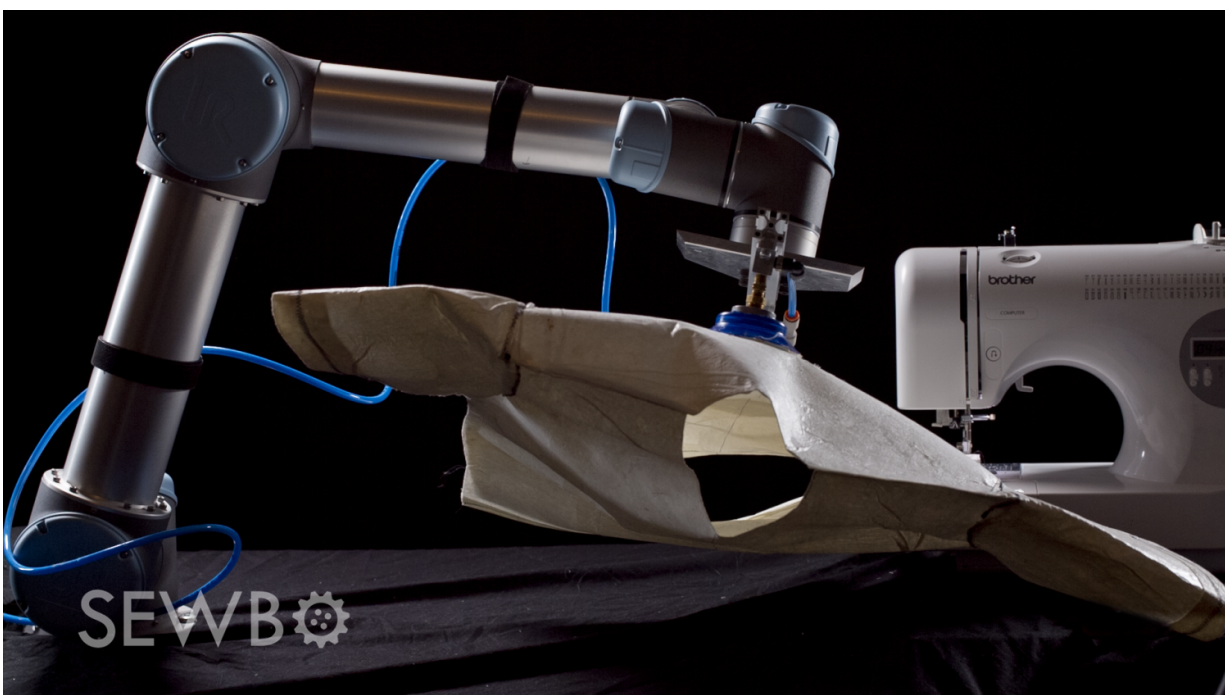


# Sewbo robot can sew a t-shirt thanks to stiffened fabric

September 24 2016, by Nancy Owano

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(Tech Xplore)—A robot that sews has attracted attention of a number of sites watching for news in robotics systems. Sewbo has announced what the company says is the world's first robotically sewn garment.

This industrial robot produced a sewn t-shirt. The company thinks manufacturers can capture potential benefits of higher quality clothing at

lower cost. "It will shorten supply chains," the company said, and lessen long lead times that hamper these [industries](#).

The feat is impressive considering the difficulties robots pose. They have far less trouble working with materials as hard as sheet metal but limp fabrics?

Sewbo's clever idea: Make the fabric temporarily stiff. As far as the robot "knows," it works with rigid cloth. "The water-soluble stiffener is removed at the end of the manufacturing process with a simple rinse in hot water," said the Sewbo site, " and the stiffener can be recovered for reuse.

Key ingredient: polyvinyl alcohol. This is "a non-toxic polymer that is already used elsewhere in the textile production process as a 'sizing' that temporarily strengthens yarn during weaving," said Laretta Roberts, editor in chief of *The Industry*.

Sewbo also relayed details about the ingredient and process in *Design News*. "The stiffening process works on every fabric we've tried it with so far," he said. That includes cotton/poly [blends](#), denim, lace, and some upholstery fabrics. "It's limited to fabrics that can get wet all the way through, so it's not suitable for coated materials, like leather or materials that have been treated to be waterproof."

Zornow told *Sourcing Journal* that the project goal was to use as much off the shelf technology as possible. Sewbo used an off-the-shelf [industrial robot](#). They taught it how to operate a consumer sewing [machine](#). According to the company they are working towards commercializing the technology.

In the comments section of *The Industry*, a reader asked how many shirts

could this robot sew in one hour. Zornow's answer: "At the current proof-of-concept stage it takes over half an hour to sew a shirt – the actual sewing is only a couple of minutes, just normal sewing machine speed, but there's a lot of measuring and adjusting going on in between steps. We expect that it will be eventually done at about the same speed as it takes for manual assembly, if not slightly faster."

What's next? Signe Brewster in *MIT Technology Review* said that "Zornow is looking for commercial partners who want to use the technology and help him work out the remaining kinks. Companies would likely set up assembly lines with the robots, with each taking on a specific task on a [garment](#)."

Fundamentally, this is a process where, as Brewster put it, "a [robotic arm](#) guides chemically stiffened pieces of fabric through a commercial sewing machine."

**More information:** [www.sewbo.com/](http://www.sewbo.com/)

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