

How a 'bionic' vest is boosting human abilities at a Ford plant

Andrew Chang · CBC News · Posted: May 12, 2018

Paul Collins works on the 'high line' at Ford's Michigan Assembly Plant, a part of the factory where cars are suspended overhead. (...) Lately he's had some help from what's best described as a "bionic vest."

(...) A worker on the line will raise and lower their arms thousands of times in a single 10-hour shift. Try doing that five days a week, year-round, for decades. The human shoulder is a wonderfully versatile and flexible joint — but it's also one of the weaker ones, and prone to injury.



Michael Drapack/CBC

When workers get injured, it can have a huge impact on their lives and (...) it's also a big issue for their employers. (...) "Depending on the length of time you're off work, it can be between \$30,000 and \$100,000 to repair a shoulder injury," says Marty Smets, the engineer at Ford who's taken charge of a pilot program to reduce workplace injuries.

You might, at this point, ask: why do we still build cars by hand? Humans, after all, have already largely been replaced in many factory jobs. (...) But jobs like those are exceptions to the rule; building vehicles is still very much a human-powered endeavour. In a complex work environment like a moving assembly line, machines notably lack intelligence, adaptability, and even precision. (...)

Ford has been offering a small number of its workers bionic vests for almost a year now as part of a pilot program. (...) The EksoVest, designed by Richmond, California-based Ekso Bionics, doesn't give the wearer super-human strength. But giving each arm an additional 10 to 15 pounds of lift is enough to make a person's arms feel weightless. (...) "I'm not using any of my muscles at all — the vest is holding my arms — so (...) the vest is (...) taking all the pressure off my shoulder," Collins says.

According to the manufacturer, a single vest sells for between \$4,000 and \$7,000 US.(...)

As for when we can expect exoskeletons to give us the super-strength required to lift entire cars overhead: (...) "That's certainly more than five years away," Ekso Bionics product manager Zach Haas says. "More than 10, probably, to be able to lift your own body weight with minimal effort. More than 20 until we see real application in a plant."

Adapted from <https://www.cbc.ca/news/technology/ekso-bionics-eksovest-ford-assembly-line-1.4645523>