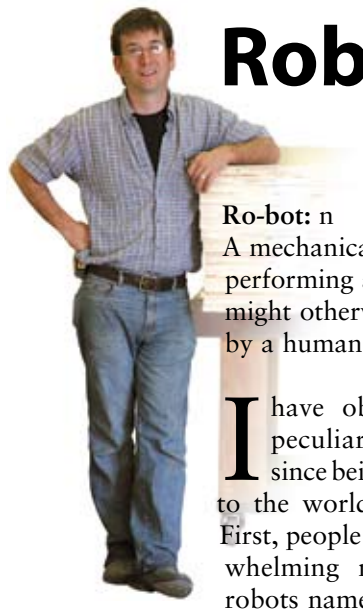
The CNC Shop With Tom Morin



Robotics Diary: Part 2

Ro-bot: n
A mechanical device for performing a task which might otherwise be done by a human.

I have observed some peculiar behaviours since being introduced to the world of robotics. First, people have an overwhelming need to give robots names. Then, they have an urge to get "Hal" to do dumb tricks like pour drinks, lob baseballs or make rude gestures. Just as we tend to anthropomorphize our pets, we have a funny relationship with machines that can sometimes seem human-like. Or maybe the influence of TV and movies has just left us feeling a tad uneasy. I know I haven't looked at robots in quite the same way since watching *I Robot*. In any case, it's clear that we don't just think of robots as mechanical devices.

I have just spent a week learning how to program and operate my new robot at the manufacturer's training facility in Wisconsin. There I learned that robots do indeed blur the line that separates machine and human.

We trained on articulated arm robots, like the kind you've likely seen doing automotive assembly. I was blown away by how quickly, and fluidly they moved. Their movements were strikingly "unrobotic" but rather quite (dare I say) human. The machine co-ordinates all six of its axes to produce graceful, controlled movements. Not only that, but at speeds many times faster than CNC machining centres. Moreover, these moves are quicker and easier to program than I expected.

Steve Miller "teaches" a robot to pick up blocks.

A robot's range of motion and flexibility opens up endless possible applications: machining, assembly, loading and unloading of other machines, part picking, palletizing, carving, drilling, material handling, tool changing, spray finishing. Google "robotics videos" or "Kuka robotics" to see some examples.

I met an array of people from all sorts of industries that have been integrating robotics into their production for years. The course instructor was an expert in automotive welding. There were two guys from aerospace manufacturer Lockheed Martin who were working on some crazy nanotube project. One engineer was from a dairy in Iowa where they used robots to handle drums of ice cream. There was an entrepreneur from Los Angeles who was using his robot to machine moulds used to cast architectural plaster parts. The massive tire manufacturer Continental Tire, which has scads of robots throughout its operation, sent some employees who were adding robotics to a rubber melting line.

Listening to all these people talk about their applications was mind expanding.

Robot training at Kuka College.

It made me wonder why we woodworkers have not taken advantage of this potential. Maybe it has to do with the pride of craftsmanship that is the cornerstone of so many companies. Does it cheapen the perceived value of our products to have them built by robots?

In any event, there are huge productivity gains to be made by companies who embrace robotics, just as there were for companies who adopted CNC technology. In my shop, my Kuka KR140 robot will be assembling a wall panelling product. We're setting up the work cell right now. Our initial tests show the robot can work six times faster than a skilled employee and consistently deliver better quality.

I haven't named my robot yet. Nor have I decided if it's just another tool, or a cybernetic plot to dominate woodworkers. So far it all looks very promising. If however, you don't hear from me again you'll know better than to trust a robot. WW

Tom Morin runs Morinwood Contract Millwork in Victoria BC. Tell him what you'd like to know at info@morinwood.ca. Some of you had trouble finding TakeOff estimating software that I recommended. Their homepage is www.peoplelogicsoftware.com.