

# Running with scissors

Case study: Fiskars, Finland

## Applications

- Injection Moulding
- Machine Tending
- Spraying
- Deburring

## Products

- IRB 2400
- IRB 140
- IRB 540



**Finnish Fiskars has carved itself a great niche in scissors, axes and other metal cutters. It's one of Finland's oldest companies, and it truly is where past meets present, and even the future.**

In 1832, Fiskars founded Finland's first cutlery mill and the production range increased from knives to include forks and scissors. Forty years ago, Fiskars launched the world's first plastic-handled scissors, and it's been running with them ever since.

"Today, we manufacture about a half a million pairs of scissors here, but also 850,000 axes, and hundreds of thousands of gardening tools, to name a few of our products. A knife sharpener has the biggest production, measured in units produced," says Carl-Olof Holm, technical director at Fiskars. Fiskars is a global player in its niche – 91 percent of its 535 million euro net sales come from outside of Finland – and high quality is its weapon against the cheaper manufacturing. High quality in everything: products, processes, R&D, marketing.

### Ability to innovate

"Our success is built on our ability to innovate. Our products are unique, not quite in the mainstream, and simply the best cutters in the world,"

says Holm, and gives an example. "When you're trimming a tree, you need most power when you're about 60 percent through, and our trimmers work in a way that helps you get that power where you need it," he says. The success story, or at least the modern part of it, started with a successful marriage of plastics and steel, and that's still in the core of it.

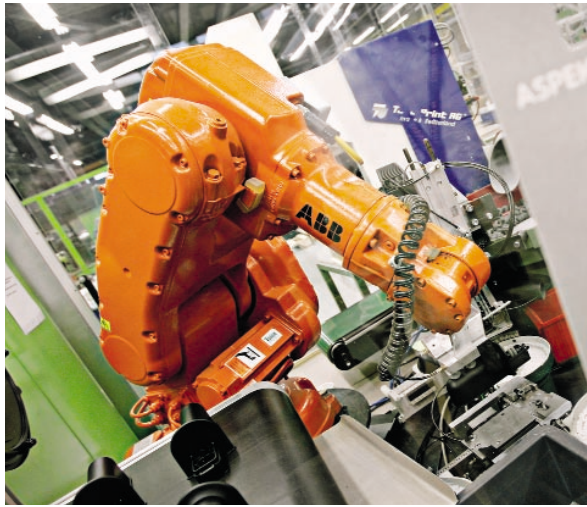
### Combining plastics and steel

There are eight robots in the injection moulding section of the production. They typically lift the handles of the gardening tools, feed them to the assembly, print the company logo on them. The biggest, and newest robot cell, has two robots working in harmony, putting together garden cutters. The IRB 2400L feeds the handles onto the line and again onto packaging while the IRB 140 adds the blades and bolts into the mix. And then the IRB 2400L takes over again and sends the finished product onwards to be packed. With

The ABB logo, consisting of the letters 'ABB' in a bold, red, sans-serif font.

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close to a dozen different phases, the speed and accuracy is impressive.

Making scissors may sound simple. A pair of scissors is a pair of scissors, right? Wrong. Fiskars makes close to thirty different kind of scissors, in different sizes, and blade shapes. They are loaded on a conveyor belt to be examined by an IRB 140 with 3D “vision” that enables it to pick the blades up from a pile and then sort and turn them so that they enter the heat treatment correctly. The blades then enter a gigantic oven with a temperature up to 950 degrees for a heat treatment that guarantees the perfect curve for the pair of scissors. They can’t be just two straight blades, because then the paper, or whatever you’re cutting, gets stuck between them, explain Johan Holmberg and Harri Engström who make sure that the production robots stay in shape. Before the two blades meet the plastic and become a pair of two-handed garden cutters, they go through another IRB series robot that sharpens the edges. “It does an edge that’s only about some fractions of a millimeter in a tiny degree angle,” says Holmberg about the robot.

## Flexible automation

Even though the products are fairly similar, they’re not the same, and that poses challenges for the manufacturing. “We like to build the robot cells as flexible as possible so that we could

switch the lines fast or assemble several products at the same time,” says Holm. “The latest one has two different shaft lengths, and three different blades, so we can manufacture six different products quite easily,” he adds.

At Fiskars, past and present meet and enjoy each other’s company. The axe is one of the first tools man has ever made, but the seven different axe models that Fiskars manufactures are state of the art. “The latest development is the Teflon coating that makes it easier and lighter to use,” says Engström. The axe blades come to the coating station attached to large hangers. The robot, an IRB 540, sprays the Teflon, the hangers turn, another coat on the other side, and so on, until all twenty blades have got their coating.

“This robot is so accurate that it uses 30 percent less Teflon than the one we had before,” says Engström. “Not only is it great for us financially, it’s also made the process safer for the employees and it’s more friendly to the environment.”

## > FACTS

### Advantages of the robots include:

- Flexibility of producing nearly 30 different scissors models with quick changeovers
- Better production saves money
- Precision that allows for fractions of a millimetre differences
- Safer for employees and environment
- Uses 30 percent less Teflon than the previous setup when coating ax blades

### About Fiskars

- Fiskars employs around 3,000 people around the world. In 2006, its net sales were 535 million euros.
- Fiskars Brands has four consumer product divisions: Craft; Garden; Housewares; and Outdoor Recreation.
- Web site: [www.fiskars.com](http://www.fiskars.com)