

ROBOTICS

Fuel Tech Sweden

Subcontractor, automotive industry



In Ronneby, a small town in southern Sweden, a newly built factory houses an array of novel technologies. Fuel Tech Sweden AB, a Raufoss' owned operation, manufactures fuel tanks for the automotive industry, using ABB's robot programming software to boost production efficiency.

To Max Mortensen, Core Process Manager at Fuel Tech Sweden, RobotStudio has opened up a whole new world of fixture design. Simply by using ABB's off-offline programming tool, he found that Fuel Tech could slash costs by a third and halve the time-to-market. In cash terms, this represents a cost reduction of SEK 100,000 to 200,000 per fixture! These savings came from utilizing digital files of products and fixtures. Thanks to RobotStudio, Max could check if the virtual robot was able to reach all the required positions, and then inform the subcontractor of any necessary modifications. The changes were carried out digitally until a perfect match was found. After that the real fixture could be produced. By using an exact replica of the ABB robot controller, RobotStudio generates accurate robot programs in RAPID code, an application that also proved highly useful for Max Mortensen.

Generating exact robot programs

"RobotStudio is very easy to work with and extremely accurate. It helps me eliminate mistakes that could jeopardize the arc welding of a fuel tank", Max points out.

As a subcontractor to the automotive industry, Fuel Tech constantly strives to shorten the time-to-market, boost product quality and lessen ecological impact.

In this competitive environment new technologies are key. RobotStudio has helped Max Mortensen increase the quality of the welding parameters. Consequently, plant flexibility has improved as new automation scenarios and production changeovers are configured and tested off-offline via the computer – without costly production stoppages.

A perfect weld in no time

“Programming offline takes half as long as doing it online. I use RobotStudio primarily for visualization – to see if the robot can make the circle movements needed for a perfect weld. I can test different ideas to reach the optimum arc welding motion. I can also see if the robot is able to reach every position. In reality it can be tricky to get to certain positions when jogging the robot. RobotStudio is also helpful when you’re presenting new equipment we’d like Fuel Tech to invest in”, he says.

Freeing up valuable time

Fuel Tech has recently invested in a twin-welding tool for one of their robots in the new fuel tank line, boosting welding speed in the process by 30–40 %. “We’ll move the whole line to a new location and have it up and running in five weeks. Thanks to RobotStudio, I can prepare the robot program for the fuel tanks we’re producing for Volvo and have everything ready in time for me to take some days off too”, Max says.

Fuel Tech’s nine robots all work with welding applications. Welding is a sensitive operation, with numerous parameters affecting the endresult, including solidity, burn-in depth, finish quality, robot accuracy and repeatability as well as the robot program itself. What’s more, welding speed, angles and distance all have an impact on the product being welded.

Operators often come up to Max’s office to discuss the radius of a given weld position. Max just boots up his RobotStudio, and gives them the right answer in no time.

Fuel Tech works in accordance with SS-EN 288 and SS-EN 729 standards – the customer decides to what extent. In documenting robot programs that have an effect on welding, RobotStudio is the ideal tool. Once a week each program is modified slightly, and the new data has to be recorded. Like so many others, a task easily carried out in RobotStudio.

Facts and figures on the Fuel Tech case:

RobotStudio version	1.1
Robots	6400,4400,2400L,2000,1400
Robot Controller	S4, S4C, S4Cplus
Start-up time	Six months, including one week’s course with ABB
Pay-back time	6 months
Necessary knowledge	Robot experience, arc welding requirements
RobotStudio units	1

