

# Faster finish

**In the tough environment of CTF in Norway, aluminum parts are cast, finished and inspected by robots who can handle the heat and radiation in a way no human being can, with four times the efficiency.**

By Gwladys Fouché  
Photos Truls Brekke

> The robot picks up a sand core from the conveyor belt and delicately places it in the casting machine. The mould closes its jaws around it, steam fizzling out, as liquid aluminum at 710°C is filled around the piece. Five minutes later, the IRB 6400 robot picks up a shiny silvery auto part and places it back on the conveyor belt, ready for the next step.

“A person could not do this job as thoroughly as the robot does,” says Rune Almaas, the operational manager at Casting Technologies Farsund (CTF). “The core is made of compressed sand that can crumble at the slightest shock. It is very difficult to handle, since it weighs 17kg. With a robot, the process is faster and more precise.”

At CTF, a foundry on Norway’s south west coast that manufactures aluminum parts for the automotive industry, wheel carriers or suspension arms are

shipped to car-makers such as BMW, Bentley, Saab or Volvo, who choose aluminum parts rather than steel because they are lighter and just as resistant – and therefore means their cars use less fuel.

CTF has used ABB robots since it was founded in 1996, because “they are the only way to compete in the market, as Norwegian salaries are among the highest in the world,” Almaas says. The 45 ABB robots – 12 IRB 2400, two IRB 4400 and 31 IRB 6400 robots – are also more productive than human labor. “This robot can deal with eight parts in one 180-second cycle,” says Almaas, pointing at an IRB 2400 nicknamed “Magda” by the staff. Magda’s job is sawing and deburring. “A person could probably only do two in the same amount of time.”

Thanks to the robots, the staff’s eight-hour shifts are made more varied. “Instead of sweating for hours



Operational manager Rune Almaas says robots help CTF beat the competition.



## &gt;FACTS

**CTF at a glance**

- Founded in 1996 in Farsund, a port on Norway's south coast
- 220 people work in the 22,000 meter-square factory
- CTF produces aluminum parts for the automotive industry, including BMW, Bentley, Volvo and Saab
- It posted a turnover of USD 65 million in 2007

**RobotNorge at a glance**

- Norwegian distributor of ABB Robotics' product line
- Founded in 2003, it is based in Klepp, on Norway's southwestern coast
- 22 employees
- It posted a turnover close to USD 11 million in 2007



on end and breaking my back, I am supervising operations, checking the machine is OK, making adjustments here and there," says operator Vidar Skarpeid as he checks the casting of a Volvo subframe. "It makes my job more interesting."

**Another advantage is** that robots can do jobs too dangerous for human beings. At the end of the production line two IRB 2400 robots place finished parts in front of X-ray machines to inspect for internal flaws. "A person doing this would constantly be exposed to radiation. We could not have anyone doing this," says Almaas. "But it's a very important job, because these parts are essential safety features on cars. So they must be of the highest quality."

The robots at CTF were supplied by RobotNorge, ABB's Norwegian distributor. "We picked RobotNorge because they answered the requirement we were looking for," says Almaas. "An additional advantage is that they're located near us [in Klepp, 175 km north of CTF]. It has been a great advantage when we need to develop new applications for the robots."

"CTF is one of our biggest customers," says Per Mauritzen, RobotNorge's managing director. "It's our most important clients in terms of the number of our robots located in one single place."

After supplying the machines and doing the initial training in 1996, RobotNorge has trained CTF staff to do their own follow-up, thus saving the foundry time and money. "The aim was for the CTF staff to be capable of using the robots' full range of capability. Now they are so well trained that they are robotic specialists themselves," says Mauritzen. CTF is now looking for new robots. "We're considering buying a couple of IRB 6400 robots from RobotNorge," says Almaas. ☉

**The benefits of robotization at CTF**

- Robots do jobs that are too dangerous for humans to do, such as repeatedly handling car parts in front of an X-ray machine that emits radiation
- It can handle heavy but delicate sand cores that are used for moulding aluminum into car parts
- Robots offer higher productivity than human beings – eight parts per cycle compared to two parts when done manually
- They also avoid employees the risk of hurting their backs, from lifting loads of up to 30kg, or from strain injuries that result from constantly repeating the same movements

