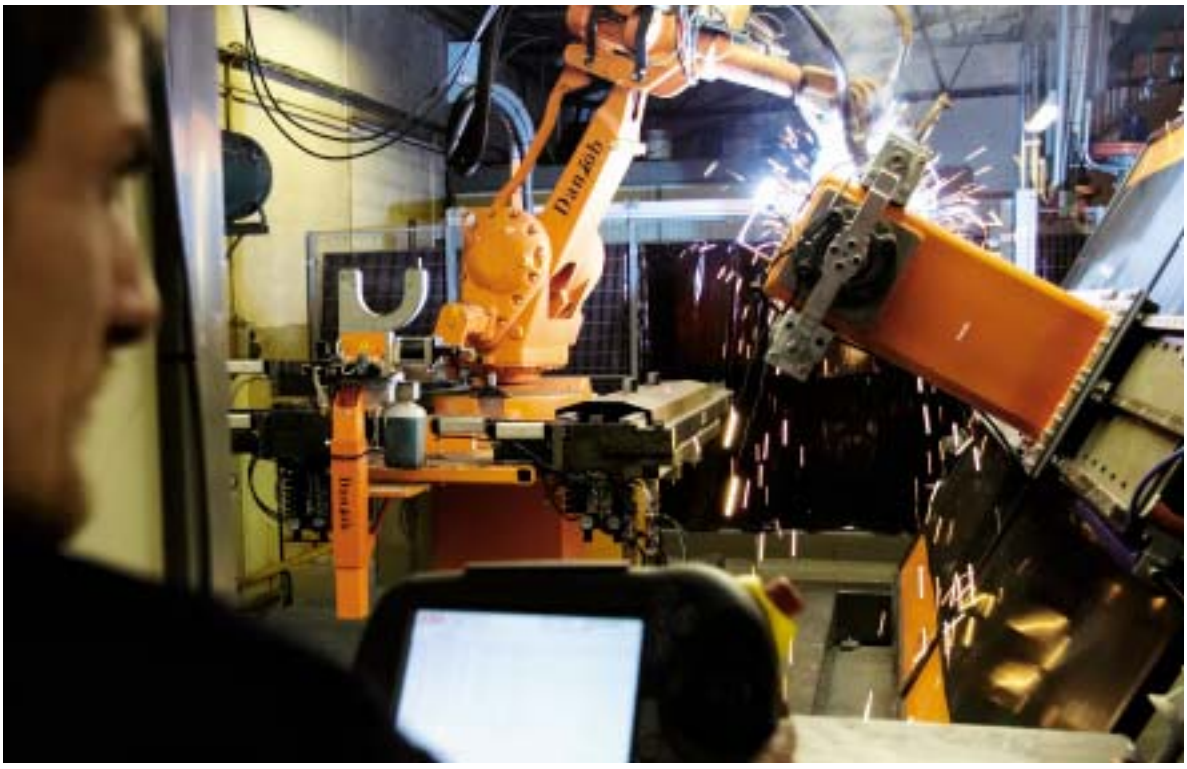
The heart of Robotics

Kverneland Group

Case study: Metal Fabrication

Application
• Arc Welding

Products
• Agricultural machinery



The grass is greener at Kverneland

The Kverneland Group is always looking for innovative solutions to assist farmers and contractors with agricultural machinery. An ABB robot system has helped the company save time and money when producing conditioners for tractors.

> The goal of the Denmark-based Kverneland Group is to provide the professional farming community with high-quality machines and professional after-sales service. Through its Taarup brand products, Kverneland provides solutions for the production and processing of grass.

Ulrik Bastholm, at Kverneland's factory in Kerteminde in Denmark, says the Taarup brand combines the disc mower principle with a conditioning system, an innovation that has reduced farmers' work in the fields and dramatically increased the quality of silo feed. Taarup was the first brand to launch a packer for large bales. The round baler has improved feed quality and provided farmers with increased flexibility during harvesting, storage and feeding. Today, Taarup is considered one of the leading brands for harvesting, processing and feeding of grass, alfalfa and corn.

At the Kerteminde plant, disc mowers and mower conditioners are produced for tractors. Using a conditioner encourages faster drying of grass and reduces risks related to weather. Moreover, the conditioner system reduces leaf loss and produces a fluffy swath.

"The new Taarup steel tine conditioner offers a new solution when it comes to aggressive conditioning and low

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maintenance," Bastholm explains. "It has a high degree of protection of the tine when hitting foreign obstacles."

In order to make the production of the conditioner rotor more automatic, Kverneland has acquired an ABB robot system.

"With the ABB robot, we now have only one process, compared with four in terms of welding and making the rotor," Bastholm says.

Today, the welding of conditional rotors is fully automatic, with a capacity of one and a half rotors per hour. The robot system is able to weld rotors of up to 4 meters in width.

"It is also better for the operator, who does not need to take the bars and put on 144 tines, while welding them manually," Bastholm says. "The ABB robot takes care of all that automatically."

In February 2006, the Danish ABB partner DanRob installed the robot system. Bastholm points out that the DanRob solution also offers reduced production time, compared with competitors' solutions. He says Kverneland now can weld the rotors twice as fast as before. Total production time for the rotor used to be two and a half hours; now it is only 45 minutes. In addition, just one operator is needed, compared with three operators before the robot system was installed.

"It is also possible to do the computer programming before we start welding the rotors," Bastholm says. "The position of different parts is calculated by a macro program according to a pre-defined pattern, which is entered in a menu in the robot's programming box. Parameters such as rotor diameter, number of parts and angles can be entered."

Frede Lysemose, sales and marketing manager at DanRob, says the robot is based on a modular system, including the IRB 2400 robot, IRBP manipulator, MigRob 500A, TCP with a Bulls Eye, operator panel and security system.

"Kverneland benefits from the ABB robot system because it boosts efficiency while also reducing tied-up production capital," Lysemose says. "It also reduces stoppages and increases quality. Production during lunch periods and pauses is possible, and the robot system improves the working environment for the operator." ⊙

>FACTS

Main benefits for Kverneland with the ABB solution:

- **One process, compared to the earlier four, in terms of welding.**
- **Reduced production time compared with other solutions.**
- **Possible to do the programming ahead of welding.**
- **Better working conditions for the operators.**