

Comer Industries Case study: Metal Fabrication



Innovating with Adam and Eve. Robotic innovations and keeping production in house guarantee quality and efficiency for Comer in southern Italy.

Adam, Eve and four others

“Adam” is the name the employees of Comer Industries have given to a 125-kilogram irb 6650s-125/3.5. “Eve” is a companion 125-kilogram irb 6650-125/3.2. They work side by side, three shifts a day, for Comer Industries, a world leader of mechatronic solutions for power transmissions (“mechatronic” refers to a combination of mechanics, hydraulics, electronics and information technologies).

Adam, Eve and four other abb robots at the Matera plant are emblematic of the innovative approach Comer Industries brings to all its activities. Innovation has been a company byword since its founding. From the outset, company

managers wanted to include as much automation as possible, in part for quality- control purposes and in part for scheduling and cost purposes, given the seasonality of agricultural components. “We didn’t start up with the idea of buying this or that robot,” Virgilio Becucci, operations director explains. “We started with the designs of the products we were going to make – cutter bars and rotary rigs.” The decision to automate with robots was a consequence of that focus.

High quality

Comer Industries wanted high quality and a three-year guarantee, which abb provided, and direct contact with its suppliers, rather than going through a systems integrator. “We wanted assurance that if service was needed, we wouldn’t have to wait long and hold up our production line,” Becucci says. The existence of an abb office in southern Italy (Naples) was an additional factor in Becucci’s decision to choose abb over competing robots. At Matera today, Adam and Eve are supported by an irb 1400 m2000 in the same cell, which does

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welding. The work flow is deceptively simple: The two basic components of a cutter bar, the housing and the cover, have been cut by laser out of high-resistance steel before they enter the cell where Adam and Eve await. Each component weighs 40 kilograms, and each cutter bar is from 3 to 4.5 metres in length. Adam picks up the metal sheet for housing from the in-feeder system, moves it into a sensor designed to detect double-thickness sheets, puts the sheet down on a centering table, picks it up again, tends an hydraulic press, moves the metal sheet inside, then tends a press brake machine and deposits the finished piece on a tilting table. Here it is centered and transferred to Eve. (During the bending cycle, the robot deposits the blank sheet on an overturning device so that bends can be made from both sides.)



“ABB has lived up to our expectations,” says Giovanni Amodi, engineer in charge of robotics at Matera plant.

Eve picks up the bended housing sheet and loads it onto a welding jig fixed on an irb p2000l positioner. She picks stiffeners, one by one, from an automatic in-feeder device and adds them to the housing, after which another abb robot (“Able” would be a good name for him), the irb 1400 aw, welds them to the housing. The potential bottleneck in this cell is the welding process. By adding another welding robot, Becucci believes that production will increase markedly without the

company having to build an entirely new cell. At the end of the welding cycle Eve again picks up the housing and loads it into a drilling machine. When the drilling cycle is completed, she unloads the machine and places the components on a removal pallet to move them to the final stages of production, where they are treated for corrosion, assembled, painted and prepared for shipping. In the high season (the winter months prior to spring planting), the factory can produce up to 1,000 cutter bars a month.

Greater flexibility,

Two additional ABB robots will be installed soon for use in machine tooling. “abb has lived up to our expectations,” observes Giovanni Amodio, engineer in charge of robotics at the Matera plant.

“Thanks to abb robots, we can produce a cutter bar in a week instead of eight,” he says. “We are able to produce cover and housing with one person instead of six. We don’t have to order parts three months in advance, and operations are simplified: Over the course of three shifts, an operator doesn’t need to adjust the robot controls more than once. We have greater flexibility, a higher technological content, and we can guarantee quality to our customers from beginning to end – something they are demanding more and more.” He adds that some processes, such as the bending of the sheet metal, can only be done by robot.

FACTS

Benefits

- Greater productivity: A cutter bar can be produced in one week, instead of eight.
- Reduced manpower: It takes one person instead of six to produce a cover and housing.
- Simplified operations: In a workday (three shifts) robot controls don’t need adjusting more than once.
- Using the ABB robots has resulted in greater flexibility, higher technological content and higher product quality.

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