

# The clever beetle is on its way: The Scarabaeus mulching robot from Brüggli Industrie

Scarabaeus works carefully and quietly through orchards and vineyards, leaving behind a nutrient-rich layer of chaff. Brüggli Industrie is promoting sustainable agriculture with this autonomous mulching robot.

For the ancient Egyptians, Scarabaeus was a good luck charm and a symbol of protection. In its reincarnation as a high-tech device in the age of digitalisation, Scarabaeus brings a stroke of luck for agricultural businesses that grow fruit or wine: Instead of manually driving through the orchards with a tractor and mower, businesses can set off the autonomous mulching robot from Brüggli Industrie and turn their attention to other tasks.

## Brüggli Industrie, Romanshorn

Brüggli is a politically and religiously neutral training and integration company that supports people with mental and physical disabilities on their way to leading a life that is as independent as possible. The company finds training and employment opportunities in the catering, industry, media and maintenance & technology business areas, among others. The Brüggli Industrie division has made a name for itself with the 4pets dog transport box and the Leggero bicycle trailer. Recently, they added the Scarabaeus mulching robot to their portfolio. In addition to producing their own brands, Brüggli Industrie provides a wide range of services for third-party companies.

## Optimally equipped for any terrain

The quiet robot is designed with skid bearings, wrap-around protection, folding blades, boom and caterpillar drive, allowing it to cut grass to the centimetre, even on difficult terrain. Scarabaeus not only works between rows of trees, but also along them. The robot does not come into contact with low-hanging branches and moves to within a few centimetres of the tree trunks, allowing the strips between trees to remain free of vegetation, meaning there is no need for pesticides.

## Targeted navigation via GPS and capable of learning

The Scarabaeus mulching robot orients itself using satellite navigation, supported by touch sensors and a gyroscope. Once the area to be processed has been defined for the first time, the robot autonomously marks out the route. On the first trip, Scarabaeus internalises the position of tree trunks, obstacles and fences, and then continues to learn more with each additional trip. The robot is consistent, economical and is preferably powered using solar power from the charging station, which is automatically started up as needed. Scarabaeus is powered by largely recyclable lithium iron phosphate batteries.

## Inspired by innovative engineering – Assembled by people with disabilities

Brüggli Industrie worked with the Zurich-based innovation company Tribecraft to develop the Scarabaeus mulching robot, helping them to transition from being a manufacturer of driverless mobility products to being a player in the future market of robotics. The smart beetle is assembled by people with disabilities who find fulfilment and recognition in this meaningful activity. In fact, the integration of people with mental and physical disabilities into the world of work is at the heart of Brüggli – an organisation that has secured a unique position by combining social and economic objectives.

Safety component for preventing collisions in everyday work: Built-in miniature switch strips from Mayser.

*"The collaboration with Bachofen has got off to a very good start. We will continue to expand our Probotic department. It's good to know that we will be able to draw on the consulting and automation expertise of Bachofen at any time in the future".*

Adrian Hungerbühler, Head of Brüggli Industrie

## State-of-the-art safety technology with Bachofen partner Mayser

The safety of people and the protection of property play a central role in the ever-growing range of self-driving devices. To meet these safety requirements, the designers of the Scarabaeus mulching robot turned to Bachofen. A safety component was required to prevent collisions with short response times, in a design that was as compact as possible and best enabled neat, i.e. invisible, integration into the device. Adrian Hungerbühler, Head of Brüggli Industrie,

commented: "With Bachofen, we found a partner who was able to offer us an all-round compelling solution with the Mayser miniature switch strip. Competent advice from the Bachofen specialists was also extremely helpful".

With Agrar Landtechnik AG as Brüggli sales partner, the Scarabaeus mulching robot is wheeling its way towards market success. And thanks to Bachofen and Mayser, there are no collisions. ■

Discover more ...



**Establishment of Brüggli as politically and religiously neutral association**  
1987

**Location**  
Romanshorn, Switzerland

**Total number of employees**  
approx. 850

**Number of employees at Brüggli Industrie**  
approx. 300

**Number of apprentices**  
approx. 230

**Managing Director**  
Rainer Mirsch

**Motto**  
"Economic, but not at any price, social, but not at others' expense".

**Bachofen customer**  
since 2021

**Website**  
www.brueggli-industrie.ch