Best practice

Industry

Cutting tools

Area of use

Production

Customer

Busatis GmbH

Main products:

Knives and blades for the timber and agriculture industries

Employees:

180 employees in Purgstall

Locations:

Purgstall, Austria - Production

USA, Canada - Sales

Founded in 1888, Busatis are experts in **mowing and cutting technology** for agriculture and forestry. They are **suppliers** to leading agricultural machine manufacturers such as **Claas, John Deere, CNH** and **Krone**.

To offer their customers tailored solutions for components subject to wear in high performance machines, Busatis has developed and produced innovative **coating technologies** against abrasion, erosion and impact stress for over 35 years.

This application example has been prepared in cooperation with our customer Busatis GmbH.We would like to express our gratitude again for the fantastic cooperation and the trust shown to our company.

Requirement

Universal hardness tester integrated into existing QA software

Busatis manufactures millions of **triangular cutters** or **sickle sections** per year. These are used in agricultural combine harvesters. The parts are stamped from blanks. In the next step, holes are drilled and the component is ground. After grinding, the cutters must be inductively hardened, following which they are cleaned so that they can be tempered.

Through **inductive hardening,** the blade of the workpiece is heated to red-hot by an alternating magnetic field and then quenched. This produces a completely martensitic structure. The **tempering process** that follows relieves stress within the workpiece and increases the toughness.

To **control** and **regulate** both **processes, production samples** must be **tested for hardness** within a certain time period. Employees receive the test requirements via the company's own QA software. After testing, the data needs to be input automatically into the company's software so that these can be retrieved and evaluated on the PC.

In summary, the hardness tester must fulfil the following **requirements:**

- **Required methods**: HV10, HV30, HV50, HRC
- **Fully automatic evaluation**
- **Data transfer** to MS Access
- **Testing during production** in shifts.

Best practice

Solution

An employee operating the machine
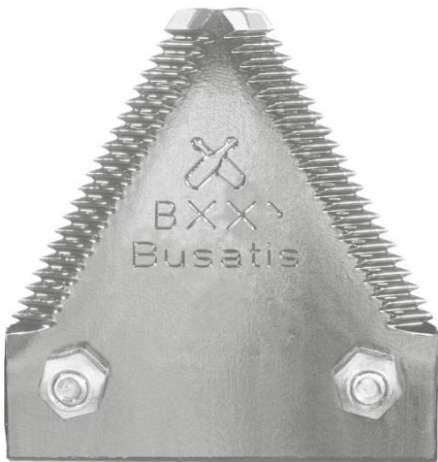
DuraVision 20 – macro hardness testing made easy

For the various hardness testing methods required, a **DuraVision 20 universal hardness tester** with an **automatic turret** was chosen. With a **test load range** of **1kg to 250kg,** the complete load range required by the customer is covered. The turret is equipped with Rockwell and Vickers indenters as well as the required optics. As a result, **tool changes** are not necessary. Because the components to be tested are small, the **handwheel** version was recommended. This allows the workpiece to be **optimally positioned and clamped.** These benefits of the DuraVision 20 allow **quality controls** to be conducted **simply and quickly.**

After the surface hardness of the workpiece has been tested, the hardness tester **automatically** sends the **value as ASCII code via RS232** to the "Brecht Box" from Brecht Elektronik GmbH. This is conceived as a collector for the measured values for Microsoft Access and operates on the principle of keyboard input.

Why EMCO-TEST?

Anton Gützer, QA Manager

With the DuraVision 20, the customer gets a **combined device**, with which they can test using both Vickers and Rockwell methods. As a result, **fast, simple process control** is guaranteed. Customers love the machine's **evaluation accuracy** and **reliability**. Its **user-friendliness** is also a significant factor that differentiates us from the competition.

"*With the Duravision 20, EMCO-TEST has taken a significant step forwards compared with its predecessor. The simple handling and precise brightness regulation, combined with the evaluation are real highlights. We're very satisfied.*"

Anton Gützer, QA Manager, Busatis