

# HYDROMILL

AT PRIVATBRAUEREI JACOB STAUDER



The **Privatbrauerei Jacob Stauder** founded in Essen (Germany) in 1867, a highly respected name in the German brewing world, has taken another major step in modernizing its brewhouse with the installation of a **Hydromill**.

This strategic investment enhances the efficiency of the milling and mashing-in process while preserving the brewery's longstanding commitment to quality and tradition. It also allowed to bring the milling in line with the latest European dust explosion standards (ATEX)

Developed and implemented through close collaboration between STAUDER and **MEURA**, the project reflects a shared ambition: combining cutting-edge process technology with the highest standards of brewing craftsmanship.



## A Hydromill for **Stauder's** brewhouse

After operating for decades with a cast iron Meura mash filter, the Stauder brewery installed in 2016 the **Meura2001** technology. The new investment in 2023 of the **Hydromill** is a next step to bring the current brewhouse to a state-of-the-art level.

The Hydromill's design is based on a **hammer mill operating under water**, ensuring oxygen-restricted milling conditions.

It significantly reduces the formation of oxidation-related compounds such as trans-2-nonenal, which are known contributors to beer staling.



Malt feeding is automatically regulated by a **horizontal stainless-steel dosing screw**, controlled according to the nominal motor load. Water is injected at several points within the mill chamber to ensure homogeneous milling and effective mashing-in. The total amount of water added during milling corresponds exactly to the **target water-to-grist ratio required for mashing-in**, ensuring excellent reproducibility from batch to batch. From the Hydromill, the mash is transferred to the mash tun by a **positive displacement pump**

Stauder's Hydromill is designed to perform milling and mashing-in simultaneously, using a wet milling process where malt is ground under water at mashing-in temperature. The system is equipped with a 110 kW motor and is capable of processing 11 tonnes of barley malt per hour. For a typical brew at STAUDER, 6.2 tonnes of malt are milled in approximately 35 minutes, including pre- and post-rinsing phases.

The entire process operates in fully automatic mode, while still allowing manual intervention for maintenance, testing or fine-tuning. The Hydromill is controlled by a Siemens PLC with distributed ET200 I/O, fully connected to the brewery's WinCC-based SCADA system.

With the commissioning of the Hydromill, the STAUDER Brewery benefits from a number of tangible advantages:

- Improved **wort quality** thanks to oxygen-restricted fine wet milling
- Excellent **mash filterability** allowing excellent performances of the Meura2001
- Highest **extract yield**
- **Stable and reproducible** extract yields, independent of malt variability
- **No dust formation at milling**, contributing to a safer (ATEX) and cleaner working environment

## Green malt Processing

One of the unique performance of the Hydromill is that it allows to process **green malt**. Green malt is the malt after germination and before killing. With green malt, green malt extract can be produced, which is opening new opportunities for reducing the overall **carbon footprint** of the brewing process, knowing that kilning is a very energy-intensive step, the use of green malt for beer or extract production is more and more considered. Further, thanks to its high enzymatic activity, addition of green malt in brewing is interesting to speed-up the mashing process or when using adjuncts.

## A strong reference in the German brewing market

With the installation of the MEURA **Hydromill**, STAUDER once again demonstrates its ability to combine brewing tradition with state-of-the-art process technology. For MEURA, this project showcases the Hydromill as a **reliable and high-performance solution** for breweries where product quality, process stability and sustainability go hand in hand.

