

High-Tech and Oak Barrels

Tradition meets modernity in Munich's Paulaner Brewery

Munich is world-renowned as the metropolis with a big heart – and the home of some of the best known and best loved beers ever produced. Right up there at the top, of course, are the beer specialties brewed by Paulaner on Munich's Nockherberg hill. In addition to their technical skills, the Nockherberg brewers also apply the most modern, state-of-the-art technology. Leuze lumiflex safety sensors are an important building block in the brewery's setup.

In per capita beer consumption Bavaria has a considerable lead over Germany's other federal states, which might possibly be down to the Bavarian propensity to consume in general, but definitely has something to do with the exceptional quality of



Pic. 1: Beer from wooden barrels still has plenty of customers today. The well-thought through automation concepts of tradition-conscious breweries incorporate this aspect.

the local beers – Paulaner's, for example. In addition to the light beer classics, the traditional brewery on Nockherberg also offers beer lovers a wide range of beer specialties, and in particular Germany's most popular and most widely drunk wheat beer, Paulaner's Hefe-Weißbier Naturtrüb (unfiltered yeast-wheat beer).

Outstanding quality, exceptional efficiency, regional roots and national significance are just some



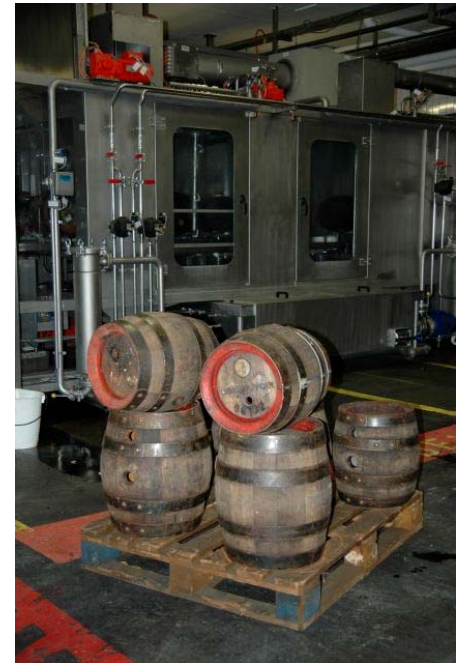
the qualities the Paulaner Brewery represents. "Feinste Münchner Braukunst seit 1634", that is to say, the claim to the "finest brewing traditions in Munich since 1634", is a well observed obligation. Paulaner's master brewers select only the highest quality ingredients for their beers, brewed, of course, in compliance with the Bavarian Purity Law: the best Bavarian malt, fine Hallertau aroma hops, top quality yeast from in-house pure culture, and perfect brewing water from the brewery's own deep well. Mixed beer drinks and alcohol-free soft drinks complement the company's offering. But of course before the thirsty horde can enjoy their beer it has a long journey to make over many stations throughout the Paulaner Brewery.

Traditional Wooden Barrels in Ultra-Modern Systems

From the brewing tanks to the bottle, nowadays the Paulaner beer specialties pass through numerous high-tech systems, which are especially notable due to their high level of automation. In the Paulaner Brewery these are the systems roundabout the brewhouse, but in particular the cleaning and filling systems. The popularity of Paulaner beers and the demand this puts on the brewery up on Nockherberg hill, are consequently met with an automated wooden barrel cleaning

system and highly efficient bottle filling line.

Wooden barrels have of course been increasingly replaced since the 1950s by lighter metal keg barrels, but in the house of Paulaner, duty to tradition and customs is well maintained, which is why wooden barrels are still in use today for special applications and customer requests (pic. 1). Wooden barrels in particular require special system-



Pic. 2: Automatic Paulaner Brewery wooden barrel cleaning system – equipped with the most modern safety sensors.

related features with their cleaning processes. With the automated system (pic. 2), one operator is enough to lay the heavy wooden barrels on the gripper's forks. A push of a button and the fully automatic cleaning process starts by itself (pic. 3 and 4).

Efficient Automation with Reliable Protective Devices

Paulaner has opted for Leuze lumiflex safety sensors in ensuring the operator is never injured by the movement of the gripper. Based in Fürstenfeldbruck near Munich, this safety specialist company produces safety sensors and evaluation devices that enable a cost-effective integration into various machine and



Pic. 3: Guarding with integrated SOLID-E Safety Light Curtains means the operator is no danger when feeding the wooden barrels.

system concepts, and also provide effective personnel protection in accordance with international safety standards, without hampering workflows in the process. These



Pic. 4: Once a barrel is on the grippers, the cleaning process runs fully automatic at the push of a button.

were critical criteria for Paulaner in selecting the required safety-related sensor products. In guarding the wooden barrel cleaning system the choice was made for Leuze lumiflex's SOLID-4E Safety Light Curtain (pic. 5).

The SOLID-4E type light curtains are positioned on both the front where the wooden barrels are put in and at the system exit where they are removed (picture 6). The slender design of the SOLID-4E safety light

curtains means they are barely visible in the overall machine concept, despite a total length of up to 1,800 millimeters, and with their extremely warp-resistant and interference-proof construction, they also ensure the highest possible system availability. The robust housing is also a decisive advantage in the cleaning area, which practically rules out any damaging by forklifts when bringing and taking the barrels away.

For Helmut Gerstlauer, head of Paulaner's electro-technology unit in the filling area, in addition to withstanding the predominantly demanding environmental conditions, the numerous benefits of the SOLID-4E also include the uncomplicated M12 connection system and the versatile mounting options for quick installation.

All factors combined, this type 4 safety light curtain in accordance with IEC/EN 61496 enables a flexible, reliable and costs-optimized overall safety solution in this highly stressed environment. If the process stops because the operator activates the SOLID-4E Safety Light Curtain with an unpermitted penetration of the 20 mm resolution protective field, the system's PLC assumes the automatic restart – an important function, which can also be executed as required with the light curtains straightforward functions selection.



Pic. 5: SOLID-4E Safety Light Curtains ensure the highest possible system availability with their extremely warp-resistant and interference-proof construction.

Leuze Sensors in All Areas

The ROBUST Multiple Light Beam Safety Device is used to guard the automatic transport systems in the brewery's wet area where empty bottles are conveyed and cleaned.

The two-beam system over several meters prevents anybody from getting too close to the roll conveyor and being injured. ROBUST light beam safety devices are also used for guarding feed-in areas with pallet transport (picture 7). This safety solution prevents people from entering the transport route and being injured by moving pallets. The multiple beam ROBUST safety system features the IP 67 protection



Pic. 6: Guarding with SOLID-4E Safety Light Curtains allows the barrel to be safely removed at the system exit after cleaning.

rating and therefore functional safety and reliability with applications under the most difficult conditions in this part of the brewery.

Leuze opto sensors are also indispensable assistants in the rest of the downstream process, with bottle and barrel filling, for example, whether it be with the barrel transport control, controlling bottle tailbacks, triggering an inspection system, or identifying gaps in the crown cap feed.

CPSET systems are deployed in the packaging area, where the drinks pallets are packed in an automated wrapping station with plastic film. CPSET is a complete muting solution from Leuze lumiflex, which, in

addition to muting transceivers, also includes a pre-installed “Muting Mounting System (MMS)” for easy and flexible mounting of muting



Fig. 7: With pallet transporting ROBUST Multiple Light Beam Safety Devices provide reliable safety on conveyor lines.

sensors on the device columns. This produces the benefits of simple mounting, easier operability, greater functionality and improved maintenance-friendliness.

Outstanding Technology for the Best Beers

Helmut Gerstlauer puts his faith in SOLID-4E and the other tried, tested

The Paulaner Brewery Group as Part of Brau Holding International

With total sales of 2.7 million hectoliters of beer, the Paulaner Brewery Group is one of Germany’s most important brewery groups. It is the strategic umbrella structure within Brau Holding International KGaA that unites well-known quality beer brands, such as Paulaner, Hacker-Pschorr, Thurn und Taxis, AuerBräu and Hopf, and at the same time specifically controls their self-reliance and competitiveness. Each of these strong brands has an unmistakable profile and a differentiated distribution area, be it the nationally and internationally coveted Paulaner Weißbier (wheat beer), the Hacker-Pschorr Münchner Hell (light beer) popular in Bavaria, the Thurn und Taxis Pils preferred in the Oberpfalz region, or the AuerBräu AG and Weißbierbrauerei Hopf beer specialties that are at home in Chiemgau and Miesbach in Upper Bavaria.

The holdings of the Schörghuber group of companies are united under the umbrella structure of Brau Holding International KGaA. Brau Holding International KGaA is a joint venture with the Dutch Heineken International B.V., 50.1 percent of which belongs to the Schörghuber Group. Brau Holding International is represented on the national and international drinks market by renowned brewery groups such as Paulaner, Kulmbacher, Fürstenberg, Hoepfner and Carlsberg.

and proven Leuze lumiflex safety solutions, and at the moment sees absolutely no reason to change to other systems. “The individual tasks in the cleaning and in filling systems require different types of sensors, and with Leuze we were able to get everything from one single source, which has had a very positive effect on our safety and automation concept”, emphasizes the head of the electro-technology unit.

Suitable solutions from competent partners are important criteria for the efficiency and high quality standards

in the Paulaner production. This is Paulaner’s guaranteed route to “number one” in beer production matters – consequently satisfying the high demands of the customer.