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Subject: KHS modernizes production at Czech brewery

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Number of characters: approx. 8,000 (with spaces and without boiler plate)

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## **Title**

Sustainable production thanks to efficient filling technology

## **Subheading**

Velké Popovice invests in a turnkey KHS line designed around the high-performance Innofill Glass DRS ECO filler

## **Teaser**

Czech brewery Velké Popovice is the next well-known bottler to go for pioneering technology from KHS, with the Innofill Glass DRS ECO filler at the heart of its new glass line. By investing in a turnkey setup from the Dortmund systems supplier and long-term partner, the beer producer is again underlining how important it believes product quality and perfect taste to be – plus the application of particularly sustainable developments. For instance, Velké Popovice uses the unfilled beer to cool the vacuum pump and thus save energy. With the installation of the rest of the line's dry section planned for the start of the coming year, the brewery is thus relying solely on KHS technology – that also includes a number of holistic digital service solutions.

## **Main text**

For many years now, both companies have endeavored to continuously refine the art of brewing with the help of cutting-edge technology. Together, they are therefore not only shaping the future but also look back on a similarly long and eventful history. While Velké Popovice's first beer was filled into a 60-hectoliter brewing kettle in the little Czech town of the same name in 1874, KHS' rise to worldwide partner to the beverage industry began with it trading equipment out of a back yard in Dortmund in 1868. Today, the brewery claims to produce one of the world's most popular Czech beer at its location around 20 kilometers southeast of Prague, named

Velkopopovický Kozel. As a leading international turnkey supplier in its branch of industry, KHS, on the other hand, provides pioneering technology – such as the flexible high-performance Innofill Glass DRS ECO filler. The close relationship the two partners have enjoyed for decades is the logical consequence.

### **Commissioned in two stages**

When the decision-makers at Velké Popovice decided to replace their former competitor glass line several years ago, they consciously chose KHS. “We want to score points with our customers for top beer quality and unique taste. The new glass filler is the perfect machine to meet this high requirement. With its over 150 years of expertise, for us KHS is state of the art when it comes to filling technology,” explains Martin Šebek, packaging manager at Velké Popovice. The entire wet section of the line, that also includes an Innoclean DM bottle washer, an Innopas SX tunnel pasteurizer and the modular Innoket Neo Flex labeling machine, was successfully commissioned in the spring of 2022. The project will enter its second phase – finalization of the remaining dry section – at the start of the coming year.

From this point forward, the brewery will fill its light and dark Velkopopovický Kozel lagers into 0.5-liter bottles using KHS equipment only. Besides the new glass line with its capacity of up to 50,000 bottles per hour, Šebek and his team already rely on a kegging system from KHS that processes a maximum of 300 kegs an hour. KHS technology is also used at other locations run by the brewery group. This includes a canning line at the Radegast Brewery in Nošovice. At the Pilsen production site, where the world-famous Pilsner Urquell is made, a KHS canning line and, since very recently, a new returnable glass line are also in operation. Together with Velké Popovice, the three bottlers are subsidiaries of Plzeňský Prazdroj a.s., itself part of Asahi Europe & International.

### **“Familiar with the demands and challenges in detail”**

“Our first machines were dispatched to Pilsner Urquell back at the end of the 1980s. Since then, a trusting partnership has been formed that we’ve intensified over the

years on both sides. As regards both the filling and packaging technology, we're familiar with the demands and challenges posed by our customer's various production sites down to the last detail," states Lubomir Neubauer, area sales manager for the Czech Republic and Slovakia at KHS.

One of these is to avoid production downtime over a period of several weeks when replacing the old glass line with the new machinery. To prevent this, Velké Popovice decided to carry out installation of the new equipment in two separate stages. The wet section has already been put into place; the dry section is to be added in a new production shop built especially for this purpose at the beginning of next year. One of the customer's other requirements was much more difficult to meet: using beer to cool the vacuum pump on the glass filler that is then filled into bottles. "Although our client was keen on the suggestion we made, he was worried about the possible impact this might have on the product quality," Neubauer says.

### **Individual adjustments to meet customer requirements**

The KHS experts were able to quickly quell any misgivings here. "The process neither affects the taste of the beer nor does it foam," promises Neubauer. For the new solution – a global first – is well thought-out: Velké Popovice fills its beers at between 4°C and 8°C. This low temperature is sufficient to adequately cool the vacuum pump, rendering any additional cooling superfluous. The beer temperature rises by just 1°C in this process, which is within the tolerance levels. Individual adjustments were made to the machine to this end: here, the beer flows through a heat exchanger that for its part cools an intermediate medium. This circuit then runs through a circulation pump to the vacuum pump where what is known as the sealing water is cooled. This process is crucial, for without these adaptations the equipment would heat up and warm water would evaporate when the vacuum is created – thus increasing the negative pressure. This needs to be as low as possible, however, to draw the oxygen harmful to the beer out of the bottle during filling. "The vacuum pump has an energy consumption or operating efficiency of up to 16 kilowatts per hour. This electrical power matches that of the cooler that's now no longer needed. This results in a not inconsiderable energy saving that other breweries could also

benefit from,” Neubauer smiles. The amount of power consumed by the Innofill Glass DRS ECO vacuum pump is already up to 20% less as it has a lower suction capacity – while yielding optimum results. “We’re pursuing a green policy throughout the entire brewery group and want to save water, energy and other media. With our new KHS line, we’re taking the next steps towards becoming a climate-neutral company,” Šebek states.

### **CO<sub>2</sub> consumption down by up to 60%**

CO<sub>2</sub> consumption on the Innofill Glass DRS ECO filler is particularly instrumental in helping to obtain this goal, amounting to up to 60% less than on other systems on the market. The lower this is per filled bottle, the more effective the brewing process; and the lower the oxygen pickup, the better the product quality – a key criterion for the Czech bottler. A lot of carbon dioxide is usually needed to reach this target, noticeably upping costs for breweries owing to the high prices charged for CO<sub>2</sub>. On the new KHS filler these two points are in perfect concordance. According to Velké Popovice, approximately 0.2 kilograms of CO<sub>2</sub> are used per hectoliter. “This is far less than on our previous machine – plus the quality of our beers has again improved,” says Šebek.

### **Improvement in performance**

KHS has also proved convincing with its digital services. Thanks to its smart ReDiS remote maintenance system, possible machine failures can be avoided in the future. An improvement in performance is also realistic, claims Šebek. As part of the additional installation package for the dry section of the line, in the future the brewery will be relying on the productive Innoline MES. This integrated, holistic IT system helps with the planning and implementation of the relevant orders for the line. It displays key performance indicators in real time, such as the overall equipment effectiveness, level of efficiency and availability. “This will give us further benefits in production and again increase both flexibility and line efficiency,” Šebek is certain. “For us, it was important that KHS was able to meet our many requirements as our reliable partner. I’m more than confident that once all lines have been fully installed, we’ll look back on this project with great satisfaction.”

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### **Pictures and captions**

(Source: Frank Reinhold)

Image download: <https://KHS.dphoto.com/album/lloxbq>

### **Innofill Glass DRS ECO filler**

Czech brewery Velké Popovice is the next well-known bottler to go for the Innofill Glass DRS ECO. By investing in the filler, the beer producer is again underlining how important it believes product quality and perfect taste to be – plus the application of particularly sustainable developments.

### **Ambitious sustainability targets**

Velké Popovice has set itself a number of ambitious sustainability targets. CO<sub>2</sub> consumption on the Innofill Glass DRS ECO is particularly instrumental in helping to achieve these targets, amounting to up to 60% less than on other systems on the market. The lower this is per filled bottle, the more effective the brewing process; and the lower the oxygen pickup, the better the product quality – a key criterion for the Czech bottler.

### **Innoclean DM bottle washer**

The entire wet section of the line, that also includes the Innoclean DM bottle washer, was successfully commissioned in the spring of 2022.

### **Brewery**

A sign points the way to the brewery or “pivovar” in Czech. So as not to have to shut down production for several weeks at the site, Velké Popovice decided to install its

new equipment in two separate stages. With the wet section already in place, the dry section is to be fitted into a new purpose-built production shop at the beginning of next year.

### **Velkopopovický Kozel**

The brewery fills its light and dark Velkopopovický Kozel lagers into 0.5-liter bottles exclusively on KHS equipment.

### **Lubomir Neubauer**

Together with Lubomir Neubauer, area sales manager for the Czech Republic and Slovakia at KHS, Velké Popovice engineer Jiří Zubí (left) is very pleased with the successful implementation of the first project phase. “As regards both the filling and packaging technology, we’re familiar with the demands and challenges posed by our customer’s various production sites down to the last detail,” explains Neubauer.

## About the KHS Group

The KHS Group is one of the world's leading manufacturers of filling and packaging systems for the beverage and liquid food industries. Besides the parent company (KHS GmbH) the group includes various subsidiaries outside Germany, with production sites in Ahmedabad (India), Waukesha (USA), Zinacantepec (Mexico), São Paulo (Brazil) and Kunshan (China). It also operates numerous sales and service centers worldwide. KHS manufactures modern filling and packaging systems for the high-capacity range at its headquarters in Dortmund, Germany, and at its factories in Bad Kreuznach, Kleve, Worms and Hamburg. The KHS Group is a wholly owned subsidiary of the SDAX-listed Salzgitter AG corporation. In 2022 the KHS Group and its 5,002 employees achieved a turnover of around €1.291 billion.

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