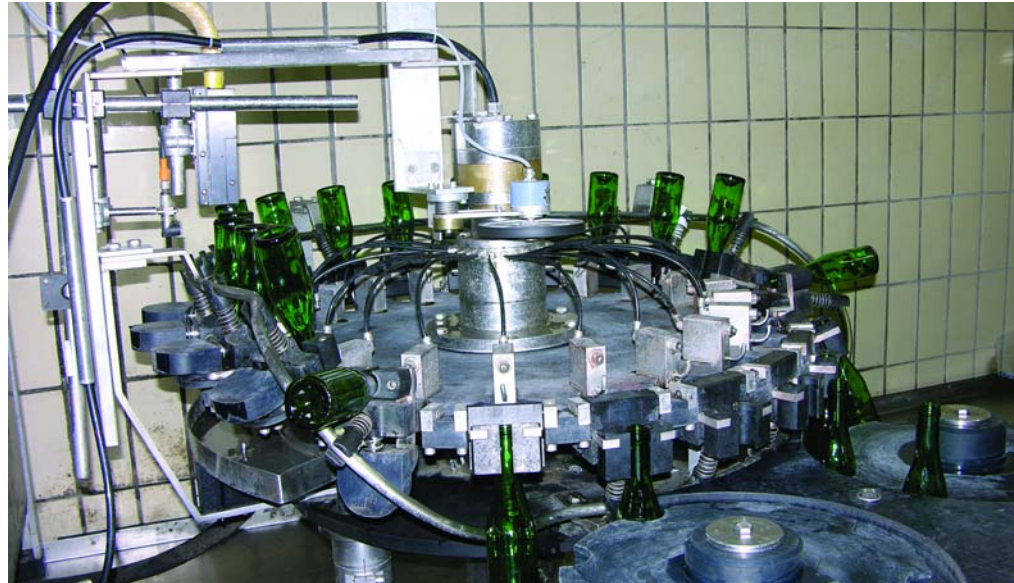


Drink Technology

Secure marking ensures traceability

- **Precise application of important information, e.g. production data, batch etc.**
- **Exact positioning, long-term durability**
- **Always reliable, even in wet environments**
- **Simple installation with virtually non-slip spring lever**



The right pressure is what is needed - not just inside the Sekt bottle

Modern quality control systems also incorporate the possibility for product traceability – this requires clear, durable labelling. Industrial rugged components from Wachendorff ensure correct rotation during printing onto Sekt bottles.

For customer protection purposes, foodstuffs are subject to a whole series of strict regulations, including the obligation to provide unique lot marking, in order to facilitate product tracing and identification. The law requires the product to be marked in a way that is both clearly visible and legible. This is not problem, for example, on bags of flour or bars of chocolate; however it is a whole different story when it comes to bottles.

It is not only that glass offers a poor background onto which to print, but glass bottles are not exactly flat, due to their shape, and during the filling process they are wet as well. This was the difficult challenge facing Karlheinz Bubeck, technical plant manager at the Ohlig Sekt winery in Rüdeshheim.

The finest wines are fermented here to produce Sekt (German quality sparkling wine). In the vaulted cellars, which are more than 100 years old, lie bottles of Sekt fermented in the classical way, whilst elsewhere more hectolitres of the delicious liquid are maturing in tanks and barrels. The inside of the winery has more the appearance of a stately villa than a production facility.

The business was founded back in 1919 at the same location where it stands today and has grown continuously. Currently 2 million bottles of Sekt leave the Rüdeshheim plant each year – and the trend is upwards. The Germans are still world leaders in Sekt consumption – increasingly however other countries are becoming aware of the excellent quality of this German product. The Rheingau is particularly appreciated by lovers of Sekt, due to the traditional high quality Rieslings grown here.

Karlheinz Bubeck places special emphasis on the latest technology when it comes to bottling the various Sekts from the barrels and tanks. It is crucial that the noble wine is protected from oxidation, so that it can be laid down for a long period of time whilst keeping the taste fresh. The bottling plant is able to handle up to 20,000 bottles per day, including quality control – and including printing the base of the bottles.

Karlheinz Bubeck has a specialist for printing and labelling to thank for the fact, that this can all be carried out without problems. This company retrofitted a specially designed inkjet printing system to the existing bottling plant. Using a non-contact method, the figures are squirted onto the domed bottle base using a white pigmented ink; this dries completely within a second, so that it cannot be washed off or smeared as the bottle continues on its way.

Because of the high speed at which the bottles move through the bottling plant, precision is very important. To ensure that the bottle is in exactly the right position when the jet of ink is applied, a tough industrial encoder, type WDG58A, supplied by the Wachendorff company, has been installed.

Grippers lift the bottles one after the other from the carousel, so that the base of the bottle faces upwards. The encoder WDG58A measures very precisely the distance that the bottles have travelled, so that the printing process starts at exactly the instance that that bottle bases pass by the print head. Subsequently the bottles are inverted again and set down.

Then they are conveyed onto the actual filling station, where they are filled with overpressure and then sealed. The final stage in the plant is quality control, where a further Wachendorff encoder is employed. Here a camera checks the fill level of the bottles. If too little Sekt is in the bottle, then this is removed from the conveyor used a compressed-air pusher. Once again, so that the air blast is applied at exact-

ly the correct moment, another WDG58A encoder measures the precise distance the bottle has travelled and then triggers the air blast at just the right point in time.

The information printed on the base of the bottles allows Karlheinz Bubeck to see at a glance, when the bottle was filled and even identify which bottles and corks were used. This means that if a customer later has problem with corks or if a bottle bursts, then it can be determined which supplier was responsible.

For Karlheinz Bubeck the chosen solution with the special inkjet printing system and the integrated Wachendorff encoders has proved a great practical success. Despite the very high number of bottles that pass through the machines, the print system is easy to maintain, with service intervals of just six months. Ink usage has also been considerably reduced.

The WDG58 series encoders, located within the filling plant, are subjected to constant wet conditions that they withstand without problem. Thanks to their optimal combination of mechanics, optics and electronics, the Wachendorff products are amongst the safest, most reliable devices available today. The high pulse rates possible in the WDG58 series, with 5,000 ppr, 10,000 ppr and up to 25,000 ppr, together with the control electronics facilitate consistently high resolution photos at precisely defined positions. Accessories such as measuring wheels and adjustable pre-tensioned spring levers that are suitable for the application described above, are available from Wachendorff's range of accessories. This means that a complete functioning system can be handed over to the user.

The high IP67 protection rating, permissible shaft loads of up to 400 N and a wide temperature range make the Wachendorff WDG incremental encoders the right choice, even under harsh operating conditions. Their EMC design ensures secure signals. A special output gives early warning that the LED performance is degrading - this occurs around 1000 hours before the encoder could actually fail, so that appropriate timely action can be taken to keep the system safe.



Fig 1:
Precise measurement of bottle position for the start of printing



Fig 2:
Virtually non-slip application of the measuring device via spring lever and measuring wheel



Fig 3:
Measurement of the bottle position for optimal quality inspection

Encoders



Fig 4:
Synergy - traditional production and hi-tech processing

Any Questions? Just call Dieter Schömel +49 (0) 67 22/9965-10, send him an E-Mail at sco@wachendorff.de or call your local distributor.

Please contact your local distributor: