BULLETIN

NATE – nápojová technika a.s., Chotěboř

July 2013

CONTENT

The upcoming international trade fair in Munich will bring the innovations of manufacturers and suppliers of beverage technology together. Recently NATE has launched many new innovations in the market.

One of them is the filling of foaming drinks using a sensitive method and one machine from this series will be presented in Germany. Furthermore, in addition to the invitation to the trade fair we provide a description of our cooperation in the modification, intensification and optimization of higher output lines - in this case for Staropramen breweries.

I would hereby like to personally invite all of our clients and representatives of cooperating companies to visit our stall no. 515 at the DRINKTEC 2013 exhibition.

Petr Papoušek, *Director General*

Dear Ladies and Gentlemen,
we would like to invite you to exhibition **DRINKTEC.**

September 16–20 | Munich, Germany

We look forward
to seeing you!

Hall A5 | Stand no. 515

NATE – nápojová technika a.s.

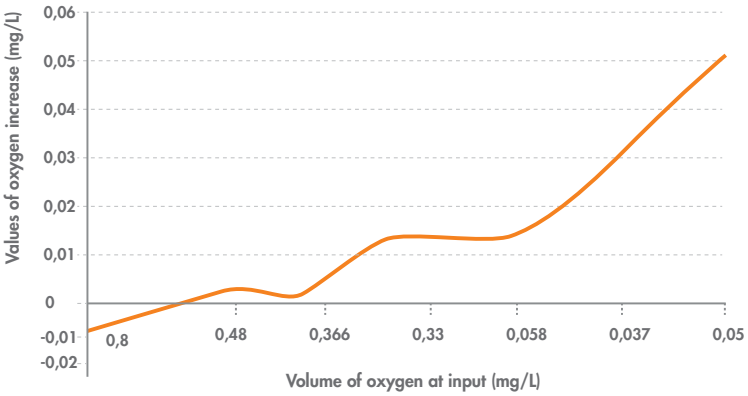
www.nate.cz

DELIVERY OF TECHNOLOGY TO THE PRIMÁTOR BREWERY

At the beginning of March in 2013, the delivery of bottling technology to the PRIMÁTOR a.s. brewery in Náchod was carried out.

The Náchod PRIMÁTOR brewery made a decision to replace its bottling equipment exactly after twenty years of operation. The existing fillers from the company KRONES were replaced by new equipment that meets the strictest technological requirements for this key technological operation. The modern equipment significantly increases the long-term stability of the product's taste, which is a key criterion considering the brewery's focus on export. In addition to savings on energy and raw materials, the brewery also expects considerable reduction in the cost of equipment maintenance. The filler is fully automated and meets the strictest requirements on hygiene and sanitation.

The equipment delivered was a VERAL 66 PK level filler with evacuation, and an effective equipment output of 20 000 BPH for 0.5 l bottles as required by the customer. The results of measurement demonstrate compliance with performance parameters. Another parameter that is measured is the increase in oxygen O_2 in beer. The maximum allowable increase in oxygen upon filling of 30 ppb was also fulfilled.



The response of beer to oxygen is determined by its absolute value. The less oxygen in beer at input to the filler, the more prone the beer is to its intake. For comparison, the graph provides values from measurement of the increase in the VERAL filler in similar operating parameters (vacuum, performance settings, length of evacuation bar, CO_2 consumption), but with a different oxygen content in the beer at input.

Filler VERAL 66 PK

EFFICIENT BEAUTY – A BRAND NEW BOTTLE WASHER

During its existence, NATE – nápojová technika a.s. has delivered a great number of technologies for washing bottles to its customers. In the past two years it has intensively devoted itself to the development and manufacture of a new machine, which is focussed on the group of customers consisting of smaller breweries, family-run breweries and wineries.

The new bottle washer for low output is manufactured in the output line from 1500 – 6500 bottles/hour (BPH).

The first delivery of the brand new machine took place in March 2013. The customer is the "brewery of the year" of 2010 and 2012 - Pivovar Chotěboř s.r.o.

A machine marked 16.06.2 CN operating with an effective output of 6000 bottles/hour (nominal output 6200 BPH) was delivered to the customer.

The bottle washer for low outputs excels (features) several pivotal properties:

- duration of the contact of the bottle with lye: 8 – 11 minutes
- bottle format: 0.2 – 1.0 l
- pre-injection of the bottles before entering the lye
- 1.5 bar pressure in spray sections
- spray sections with rotating, self-cleaning jets
- flow in the lye tub in the direction of the label scraper induced by a pump – improves cleaning of the lye content
- separation of labels – underwater and above-water rinse
- SIEMENS S7 control system displays and enables the archiving of operating data and remote administration

At present, the bottle washer is incorporated in the filling line with an output of 3000 BPH. However, the brewery is considering the renovation of the bottling line and increasing its output to approximately 5000 BPH in the near future.

Description of the process:

• pre-injection of bottles	45–55°C
• soaking in lye bath	65–80°C
• lye spray	65–85°C
• hot water spray and rinse	50–60°C
• cold water spray and rinse	25–35°C
• drinking water spray and rinse	10–15°C

EFFICIENT BEAUTY – A BRAND NEW BOTTLE WASHER

FILLING MILK, KEFIRS AND YOGURTS

BASIC PRINCIPLE OF FILLING

- the drink flows into the bottle into the valve of a tube, which is fitted with an inductive flow metre that senses the flow of fluid and transmits impulses to the control system
- once the control system registers the relevant number of impulses (volume), it closes the filling valve
- the liquid flows into the bottle – air leaves the bottle freely into the atmosphere during filling

Filling non-carbonated drinks

FILLING METHOD

Volume filling with a flow metre

FILLING OPTIONS

- still water
- juice, natural juice with fibre
- iced tea
- dairy-based beverages, drinks with higher viscosity (kefir, acidophilus milk)
- filling glass and PET bottles

DESCRIPTION OF FUNCTION – PRINCIPLE

- neither the valve nor tube comes into contact with the bottle
- zhe air leaves the bottle entirely outside of the tank
- drinks with small particles can be filled
- it is possible to change the filling speed – reduction of drink foaming
- the filling valve is not affected when changing the filling volume
- minimum drink residue when operation ends
- drink foaming in a semi-septic and aseptic environment

DESIGN EXAMPLE

Dairy Valašské Meziříčí
PETBLOK 24/24/6

Korenovskyy Konservno-Molochnyy Kombinat,
Korenovsk - Krasnodar Region
PETBLOK 30/30/6
PETBLOK 24/28/6

BASIC PRINCIPLE OF FILLING CASE STUDY ON:

Filling fresh milk with an expiration date within 10 days

- the case study was carried out at the Dairy Valašské Meziříčí
- PETBLOK 24/24/6 filling equipment
- bottle filling precision:
  - dairy Valašské Meziříčí
  - milk: STDEVP 1.54
  - kefír: STDEVP 1.61
- PETBLOK 24/26/6 innovated filler (Korenovskyy Konservno-Molochnyy Kombinat, Korenovsk - Krasnodar Region)
- water: STEDVP 1.0
- the bottle is treated before the actual filling by rinsing the inside of the bottle with a solution, disinfectant and subsequent rinse with water
- it is possible to have exterior rinse of the bottle installed

MACHINE COVERING

- only the rinser, filling valves and closing heads affects the working space
- H 14 HEPA filters applied- class of air purity class in the workspace ISO 7
- part of the closing machine, tank and filling pipes are located outside of the machine's clean zone

FM (flow metre) type filling machines in ultra-clean and aseptic design are fillers that are suitable for filling microbiologically sensitive non-carbonated products in glass or PET bottles.

The modern filler system ensures long life of the product, which is processed only using heat and without the use of chemical preservatives.

The entire machine is equipped with exterior covering, ensuring a sterile environment for the filling process. The external side of the covering is fitted with a filter unit with an H14 class HEPA filter, which ensures overpressure of sterile air that corresponds to purity in accordance with the ISO 7 standard.

TECHNICAL FEATURES:

- all of the parts that come into contact with the drink are made from stainless steel
- sealing is made from EPDM seal, which guarantees the health safety and resistance to heat and cleaning solutions
- formatted parts are easy to change (for various bottle sizes)
- machine output regulation – sensors at the entry and exit for checking the presence and supply of bottles
- frequency converter for smooth operations and output regulation
- contactless sensors for the presence of bottles and controlling bottle filling valves
- easy sanitation of filling valves and filler tanks – prepared for interconnection with closed CIP circuit
- roofed structure table for easy drainage of fluids from the machine's table
- components DANFOSS, FESTO, SIEMENS, SEW EURODRIVE, IFM – electronic

COOPERATION WITH PIVOVARY STAROPRAMEN S.R.O.

In recent years, Pivovary Staropramen s.r.o. has been our stable partner. In cooperation with Pivovary Staropramen s.r.o. we have even become one of the suppliers of technology not only for the actual plant itself, but also for the brand new brewery gem in Smichov, Prague – the Visitors Centre.

The contract delivered throughout the course of March and April of this year was focussed on interconnecting palletization with the pallet lift from floor -1/0. The aforementioned delivery also included the installation of a pallet wrapping machine including a lift device (from PRAGOMETAL, type: OBS ROTOMATIC STANDARD+) and applicator of labels with EAN codes (from EPRIN, type: M8460).

The delivery included, among others, safety fencing, including eight multi gates in the total length of 70 metres and a lifting bridge with safety features. When installing the equipment, the existing output section of the KRONES palletization machine was moved by two meters.

Lifting bridge

Pallet wrapping machine

LABEL CHECK

Check for the presence and position of labels, overlap of all-around labels and data print – EXAN LABEL CCD

Application:

- check for the presence and position of labels on bottles in the labelling machine
- check for the overlap or incomplete adhesion of all-around labels
- option to check printed data
- output range of up to 40,000 bottles/hour
- inspection of glass and PET bottles
- can be applied to the existing labelling machines

Description of function:

- the equipment is controlled by the Siemens S7 control system,
- labels are checked using one of more cameras (cameras are normally installed in the labelling machine),
- sorting is conducted with the help of a pneumatic "Push" sorter system – onto the accumulation sorting table or into a container (PET bottles),
- components used:
  - Keyence cameras
  - Hoerbiger pneumatics – for sorting bottles
  - LEUZE, OMRON sensors (optical + incremental)

Advantages:

Device that is Integrated directly in the labelling machine device.

References:

Brewery Svijany a.s.

- check of 3 labels and data using 2 cameras
- NRW 0.5 l bottles
- device output of 15-25,000 bottles/hour

PALLETIZATION LINE

At the beginning of the year, work on a contract was launched for the whisky producer Angus Dundee in Scotland concerning the supply of new bottling lines in the total value of CZK 25 million.

The factory for the production of whisky is located in the region called "Tomintoul", which the name of the distillery itself is based on. Tomintoul Distillery has been a part of Angus Dundee Distillers since 2000.

The project, which will be implemented throughout 2013, comprises several phases. The first phase is successful implementation – supply of a palletization line with subsequent optimization of the existing line of the customer.

The second part of the project involves moving the line, delivery of transport routes and adjustments of the existing cabinet.

Palletization line NMP 1200

- the palletization line processes a wide range of cartons with 0.5, 0.7, 1.0 l bottles
- sorting based on carton: 6 bottles (0.5 l volume) and 12 bottles (1.0 l volume)

Description of the device:

- the device operates on the principle of ascending palletization (explain)
- carton sorting is carried out at a standard height of 1,000 mm
- layers of carton are transferred and placed on pallets using transfer plates
- individual cartons are sorted into pallet patterns according to the type of pallet
- 14 programs for sorting cartons are saved in the control system of the palletization line
- carton storage: EURO PALLET (800 × 1,200 mm); STANDARD PALLET (1,000 × 1,200 mm)

Specifications of the device in operation at Angus Dundee

An atypical interlayer on the pallet was used for packaging pallets (the interlayer overlaps the outline of the pallet on two sides by approx. 100 mm and the packaged goods are not attached to the pallet).

Settings of the device:

- number of layers on the pallet
- operation with an interlayer or without an interlayer
- manual testing of individual functions
- entry – record of information about device failures

Device output:

- 120 layers/hour (general output)
- packaging specifications:

Bottle	Sorting in carton	Output set at
0,5 L	2 × 3	2 400 cartons/hour (14 400 bottles/hour)
0,7 L	3 × 4	1 500 cartons/hour (18 000 bottles/hour)
0,7 L	2 × 3	2 000 cartons/hour (12 000 bottles/hour)
1,0 L	3 × 4	1 100 cartons/hour (13 200 bottles/hour)

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Washing and filling line for KEG barrels NM KEG 60

NATE CHOTĚBOŘ

Filler VERAL 66 PK

Palletization plant NMP 1200

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