

Editorial

The utilisation and improvement of existing technologies is one of the ways in which to save investment funds during the requisite rehabilitation or modernisation of bottling plants, we would like to demonstrate NATE's approach to reconstruction in regard to the project by NATE and PepsiCo in Romania.

The invitation to the autumn trade fair in Munich also concerns the introduction of the new filling machine, which will be exhibited there. The electronic volumetric valve, developed by NATE, is suitable for carbonated beverages and its benefits, with a brief description, can be found below.

The "Washing" Department embarked on a co-operative project – the renovation of the washing process in the Ostravar Brewery, a member of the AB - InBev group – with a huge deployment of energy, part of which also involved an entirely new washer for bottles. Delivery of this took place in record time, without any compromise to quality, and the time schedule, importantly for the beginning of the season, was met.

We wish you a successful season.

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CLEANLINESS FIRST!

...or the ULTRA CLEAN covering on the refurbished filling machine for the packaging of non-carbonated water for Pepsi Americas

The town of Covasna, with its eleven thousand inhabitants, is located in Transylvania in Romania. Not for nothing it is called "the town of a thousand mineral springs". Each spring contains a diverse mix of minerals, primarily carbon dioxide, sulphur and ammonia. The name Covasna is derived from the Slavic Cvaz, which means bitter or sour, and draws attention to the taste of the mineral waters.

The Pepsi Americas Company, which has a plant for bottling mineral water in Covasna, is intending to commence the bottling of non-carbonated mineral water. They have approached us, asking whether we are able to guarantee the microbial purity of this sensitive beverage, using the older filler, the Veral 64, which was at that time owned by the Pepsi Company in Slovakia.

NATE proposed a major overhaul of the machine, in the course of which the basic elements of the

current series of machines produced by our Company were utilised, in order to guarantee 100% sanitation of the machine in fully automatic mode. Since the bottling line operates in an open hall, where forklifts and other technological machines are in use, it was decided to counteract these negative factors by supplying special protective covers for the machines which are used elsewhere for machines for the implementation of higher levels of cleanliness, Select and Ultra Clean. This is a cover for a machine, which encompasses an enclosed space with a flow stream of filtered sterile air. The cleaning of external surfaces of machinery and the foaming protection was also designed in cooperation with the JohnsonDiversey Company in order to achieve the parameters required.

(to be continued on the next page)

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CLEANLINESS FIRST!

(finish)

The frame, the actual drive of the machine and the tank of the filler remained and underwent a major overhaul. Subsequently new components, produced by NATE, were supplied:

- Filling valves, controls for valves, sanitation adapters, stainless thrusts, a head for the delivery of CO₂, a Siemens S7 300 control system, beverage transport and centrally controlled foaming of the machine.
- The machine was equipped with a new crowner for use with alcork caps.
- The protective cover of the filler will guarantee microbiological purity during the filling and crowning of bottles.

In addition to fillers, we have also delivered transport routes to Pepsi. Conveyers between the jetting machine and the filler are covered in order to avoid any contamination of the bottles.

This project was successfully completed with the achievement of microbial cleanliness of the beverage, which, after the 14th day of operation, was certified by the independent Romanian state laboratory, in accordance with the validation standards of Pepsi Americas.

Improvement to the sanitation and microbiological purity of older-model filling machines manufactured by NATE:

- Adjustment of tanks of fillers for the older models – a channel for draining off the sanitation solution, adjustment of lugs for the float unit, the manometer for the sensor
- Continuous regulation of level and pressure
- Fully automatic sanitation
- Washing of the filling-valves
- Cladding for the turntable of the filler
- Foam cleaning of the filler (manual or automatic)
- Covers with air-filtration for the fillers
- Adjustment to the lubrication for crowners; a change from oil to grease lubrication

Adjustments for the purpose of increasing the microbiological purity of filling can also be carried out for machines made by other manufacturers; however, this will always be undertaken only after prior technical assessment.



*The Veral 64 filler prior to refurbishing
(the year of manufacture 1997) – machine drive*



*The Veral 64 filler prior to refurbishing
(the year of manufacture 1997) – turntable*



The Veral 64 filler after refurbishing

Overpressure Filling with the Utilisation of Flow Meters

Intended for:

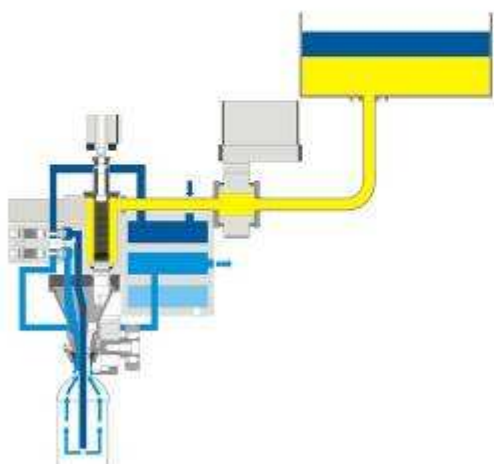
- Bottling of mineral water, soft drinks, cola-type beverages and beer
- Bottling into PET bottles with flushing of bottles by CO₂
- Filling into glass bottles with evacuation
- Range of volumes filled between 0.2 and 3 litres
- Output range from 2,000 to 30,000 BPH

The solution by the Nate® company offers the following competitive advantages:

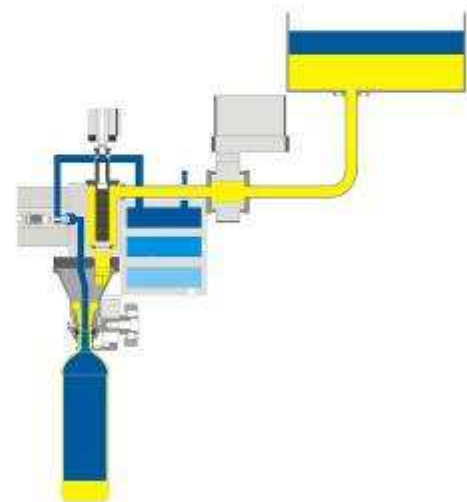
- Exhaustion of air from the bottle during filling outside the space of the tank
- Change in the volume filled without necessity of adjusting the valve
- Option of either slow or rapid filling – adjustment of the mode utilised in accordance with the foaming of the beverage
- Electro-pneumatic control – with the possibility of saving the control-data for valves for various types of beverages in the memory of the machine – for different kinds of drinks, in regard foaming, need for flushing etc., may be tuned and settings for the filling saved to the memory (number and duration of flushings, the speed of filling, number, the length of release of pressure) and prior to each filling, the set up for the filling machine, using the operator panel without a difficult mechanical resetting of the stands.
- The filling process is controlled from the control system of the filling machine and therefore is not dependent on the current performance of the filling machine or affected by the stopping of the machine
- Possibility of automatic deployment of sanitation chucks
- Better sanitation of the filling valve, in comparison with the mechanical volume valve (simpler mechanical design) – the design of the fluid valve cone and the valves for evacuation, pressurisation and release of pressure, using bellows and membrane seals
- Speed performance about 15-20% higher than with the mechanical volume valve
- Tank of the filling machine
 - circular design
 - easy sanitation
 - flushing jets
 - minimal remains of liquid at the end of filling
- Achieving a low increase of the O₂ level during the filling of beer due to the possibility of single or multiple flushing of bottles when filling into PET bottles or of evacuation when filling into glass
- Bottling of beer at a temperature of up to 12°C and with a saturation of 5g CO₂ / l
- Bottling of soft drinks and Cola-type beverages at a temperature up to 18°C and with saturation 5g CO₂ / l



Filling cycle:



Flushing and pressurising

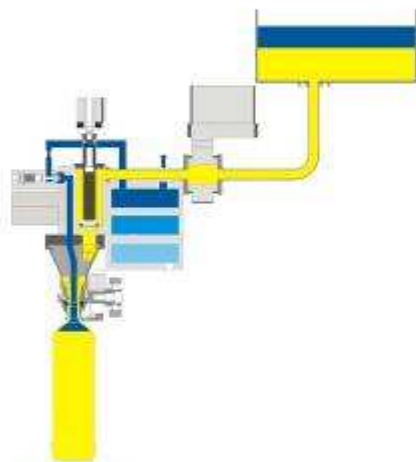


Filling

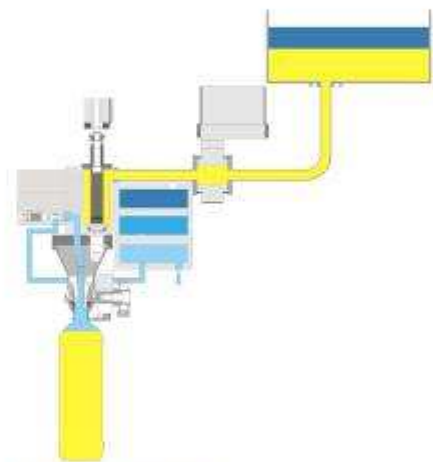
Overpressure Filling with the Utilisation of Flow Meters

(10/12/17)

Filling cycle:



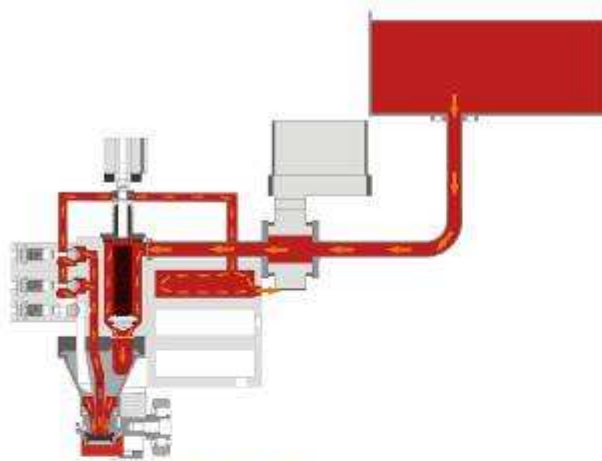
Slow filling



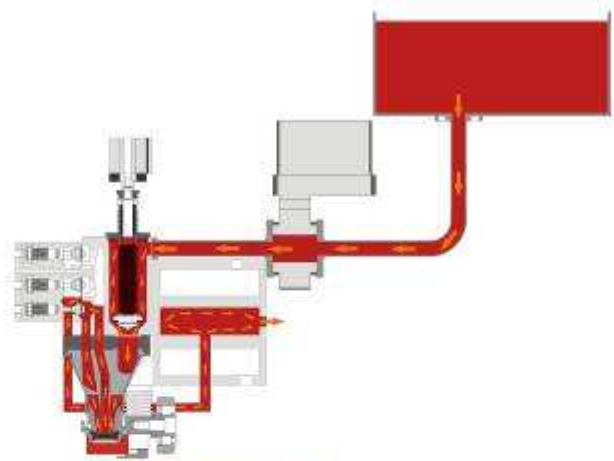
Release of pressure

CIP - Cleaning In Place

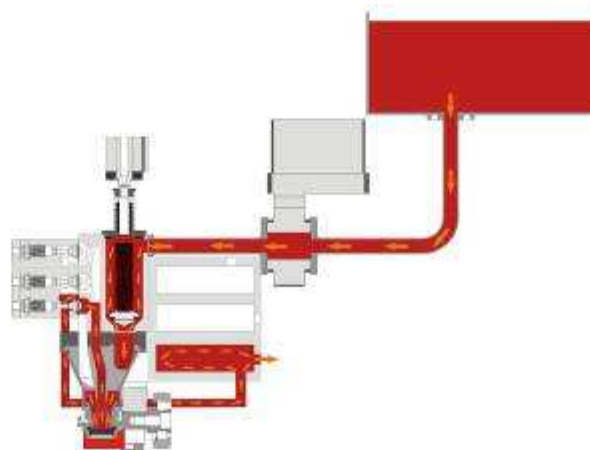
the control system of the machine and the electro-pneumatic control of stop flaps and valves in the pipeline, in conjunction with sanitation equipment, permits the automatic and unattended sanitation and flushing of the filling machine. Sanitation consists of flushing the machine with water; cleansing employing acid or alkaline detergents; subsequent rinsing of the interior space, or, if necessary sterilisation of the filling machine.



CIP of the valve - step I



CIP of the valve - step II



CIP of the valve - step III

A New Bottle Washer for Ostravar



From mid-April of this year, a new washer of returnable bottles, with the DELTA 28/34.4 designation, has been in operation.

This contract had a very tough deadline: "After we had won the tender, we received the complete submission on 23rd of January. We took on a certain risk. The machinery, whose production normally takes about five months, we managed to implement in just 65 days," the Project Manager, Zdeněk Holas, revealed.

The new washing equipment, with a capacity of 34,000 bottles per hour, is the largest manufacturing investment made by the Ostrava Brewery since the year 2005 and it is also much more environmentally friendly; "After the commencement of full operation, we will be needing much less water, steam and electricity to wash our bottles", states Richard Kornas, Head of Technical Support at the Ostravar Brewery.

According to the manufacturer, 250 ml of water is sufficient for washing one bottle, with a consumption of 1,370 MJ of steam per hour. Therefore, on an annual basis, Ostravar, according to their calculations, will save 5 200 GJ of steam and 17 500 m³ of water for the washing of returnable bottles.

The washing machinery for returnable bottles also demands respect for its dimensions. The washer is 12.5 metres long and 5.6 metres wide and weighs 40 tons. To load this huge colossus onto the transport truck was not easy. Under the supervision of two auto-crane operators, the whole process lasted four hours.

Only then could this excess load be driven through the streets leading into Ostrava and to the Ostravar Brewery.

In order to enable the installation of the washer in the brewery, located in the centre of Ostrava, it was necessary to enlarge the bottling hall by 6 metres and to remove the ceiling above the bottling hall.

The technicians from Nate and from Ostravar managed to complete the installation of the new washers in a record time of 2 weeks. "This involved a very complicated technological process, which required both the redeployment of the production activity and the service of giant-tonnage cranes," states Richard Kornas. In addition to the washer, Ostravar also replaced 41 metres of conveyor belt in the bottling hall.

The washer for the returnable DELTA 28 bottles is fully automatic. From the moment when a dirty bottle arrives at the washer, until it goes out clean, on the belt, takes only 16 minutes and all this with just half of the previous consumption of water and steam. A beer bottle passes through eight washing zones during the washing process, thereby ensuring perfect washing.

PIVOVARY STAROPRAMEN

Pivovary Staropramen a.s., with its 15% share of the domestic market, is the second largest producer of beer in the Czech Republic. The Pivovary Staropramen Company offers its customers and consumers the broadest ever range of beer brands. The company is also the second largest exporter of Czech beer and its flagship Staropramen brand is exported to 30 countries worldwide. The company is a member of the Anheuser-Busch InBev Group, the world's leading brewer.



The 40-ton washer leaves the gate of the NATE – nápojová technika a. s. in Chotěboř



Unloading at the Ostravar Brewery, with the help of giant-tonnage cranes



Bottle Washer at the Ostravar Brewery

The Bottling Line for Vinegar for Kávoviny a.s. Pardubice



The history of this company goes back to the 19th Century, when **Johann Heinrich Franck** in partnership with Robert Franck, in 1896, founded a factory for substitutes for classic bean coffee in Pardubice – as a unit of the international **Franck** company. Their best-known product was the "Franck's Real Coffee Additive", abbreviated to "**Franckovka**". The most widely used trademarks for the coffee substitutes from Pardubice were a **coffee grinder** and later a teapot, with a striding lion, bearing on his back a cup of coffee and a spoon. The company's modern history began in 1991, when the joint-stock company, **Kávoviny a.s. Pardubice**, was founded. The period of the emergence of the joint-stock company was characterised by an extensive modernisation of the factory equipment. New technological equipment was purchased – a fluid dryer of granulators for the instantisation of Vitakáva; three years later a new grain-roaster was put into operation and the installation of a technological line for the production of flavoured puffed rice was effected.

1997 was another year full of changes – a technological line for the production of mustard was put into operation, a line for the production of granulated extracts and new technology for the packaging of "heavy groceries". The company currently offers a wide range of products (pulses, mustard, vinegar, biscuits, beverages ...).

The NATE company also had the opportunity to participate in further innovations, on the basis of a **public tender**, which was launched in August last year. This was for the bottling line for vinegar. This competition was won by NATE in October of last year. The project involved the delivery of a **bottling line for vinegar with an 8% concentration of acetic acid in PET bottles**, at a performance rate of up to 6,000 bottles per hour in 1 litre PET bottles with press-on caps and paper body labels, in accordance with the sample provided. Packaging 2x3 into heat-shrinkable foil, without printing and with no underlay.

This technological line consists of an orientator for PET bottles, including an elevator with a hopper, a tri-block for the jetting, filling and capping of bottles, sorting equipment for plastic press-on caps, a labelling machine, a packaging machine and also a conveyor for bottles and packages, in accordance with the project created.



A unique machine in this technological line is the **prototype of the semi-continuous packaging machine**. This is a packaging line for PET bottles of the **NAPACK 1200** type. This automated packaging line of PET bottles into heat-shrinkable foil consists of an input sequencing section, a welding section, a hot-air tunnel and an output cooling tunnel. **The NATE – marketing, a.s. Company, is the only manufacturer in the Czech Republic producing semi-continuous packaging machines.** These are machines with a uniquely designed separation system for bottles already sequenced for packaging, before reaching the welding bar, which permits performance by the machine of up to 18 cycles/min. Another technical advantage of these machines is the special design of the hot tunnel, in which a special system for the adjustment of the airflow flaps is implemented. This solution allows for perfect sealing of a package of bottles, even using very thin, heat-shrinkable foil, which provides substantial operational savings.

The complete technological line for the Kávoviny, a.s. Company Pardubice was supplied at the end of 2008.

Apology

We would like to take this opportunity to apologise to readers of the NATE bulletin, dated October 2008, and to the Cheops spol. s r.o. Company for an error in the article "Presentation of the NATE - marketing, a.s. Company", by which, on page 5, a photograph was used of the gripping head of the CHEPAK 3 inserter, made by Cheops spol. s r.o. Company.

The DRINKTEC 2009 Exhibition

**The DRINKTEC 2009 Exhibition, Munich, Germany
14th – 19th September 2009**

Dear Friends,

We would like to invite you to the Drinktec 2009 Exhibition - technologies for beverages and liquid foods, which will take place from 14th – 19th September, 2009 in Munich, Germany.

This year we will exhibit there the volume filler with flow meter for filling of various types of carbonated beverages with an electro-pneumatic controlled valve.

Come and visit us in Hall A5, at Stand 545.

We look forward to seeing you there!



**Visit us at
Hall A5,
Booth 545!**

drinktec.com

14–19 Sept. 2009

New Munich Trade Fair Centre

