

Beyond natural water

Mount Asama, the most active volcano in Japan, rises in the vicinity of Tsumagoi, in the prefecture of Gunma, an area rich in water springs. It is here that Tsumagoi Meisui Co. Ltd. bottling company is located. To meet the growing domestic demand for mineral water under the Tsumagoi and Oku-Karaizawa brands, the company turned to SMI for the installation of a stretch blow-moulder EBS 3 K Ergon for the production of 0.32l, 0.41l and 0.5l bottles in PET.



The most active volcano in Japan, mount Asama, rises in the vicinity of Tsumagoi, in the prefecture of Gunma, an area rich with water springs, like that of the Tsumagoi Meisui Co. Ltd. Bottling company.

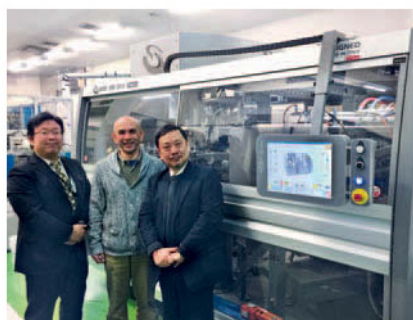
The Tsumagoi Meisui Co. Ltd production plant is situated on a plateau 1,290m above sea level at the foot of Mt Azumaya (2,354m), one of the 100 most famous mountains in Japan. In winter its peak is covered by several metres of snow, which, when this melts, penetrates into the subsoil reaching deep into the mountain, to become a source of water that is high in quality and rich in nutrients. It is from this area that the Japanese company obtains the natural mineral water that it bottles, extracted by modern plants, from a 250m deep underground well. This water, which has properties that remain unchanged throughout the complete production process, has a constant temperature all year round of 9°C, it is very light (for this reason it is ideal for preparing tea, coffee and various dishes), it is slightly alkaline, with a PH of 7.6 like the body's PH, furthermore, it is particularly suitable for babies as it has low percentages of magnesium and calcium.

Investing for efficiency and improved availability

The strong growth of the bottled water market in Japan has made it necessary for Tsumagoi Meisui to

expand. In July 2018, to be able to support an increase in production, the need to reduce delivery time for the water in PET bottles under the brand Tsumagoi and Ok-Karauizawa, the Japanese company invested in a new EBS K Ergon stretch-blow moulder from Italian company SMI. This new equipment was installed in the existing factory specifically for bottling water. It is equipped with the most modern technology within this sector.

Increasing storage capacity and reducing distribution costs are the prerequisites for increasing production efficiency within a bottling plant.



From left to right: Hiromasa Suzuki, Sales Dept. At Correns; Minoru Toyota, President of Tsumagoi; Yoshiki Maeda, Sales Manager at Correns

The third plant belonging to the Japanese company, Tsumagoi Meisui, inaugurated in December 2018, was built with the aim of storing products from the other production lines in the other two plants. However, various reasons, such as the strong demand from the Japanese market for bottled water and the necessity to upgrade the production structure, pushed the company into also investing in a new bottling line. The production volume of the existing line was around 120,000 cases per month, and now thanks to the new SMI machinery, which was recently installed, they will be able to reach a capacity of 150,000 cases/month. The storage capacity of this third plant, will not only allow Tsumagoi Meisui to store up to 20 days of production, it will also reduce logistic costs by around 6%, by eliminating storage and transport costs between the five warehouses they had previously rented.



The Tsumagoi blower on show at the "Drink Japan 2018" exhibition

The third Tsumagoi-Mura plant

- Area occupied: 20,178 m²
- Construction began: May 2018
- Activity began: December 2018
- Effective storage capacity: around 180,000 cases
- Capital invested: around 700 million yen

Before being installed at the Tsumagoi plant, SMI's new EBS 3 K Ergon stretch-blow moulder was presented to the Japanese "food & beverage" market during the Drink Japan 2018 exhibition, held in Tokyo in June, where it attracted much interest and approval from a high number of visitors. SMI were present at the exhibition in partnership with Correns Corporation, their local representative.

Stretch blow moulder EBS 3 K Ergon

Functions: stretch-blow moulding of 0.32l and 0.5l bottles in PET with a square base and 0.41l and 0.5l cylindrical bottles with a production capacity of up to 6,000 bph.

SMI claims the following advantages:

- high efficiency rotary stretch-blow moulder equipped with motorised stretch rods (usually used for high speed production), which is intended to demonstrate advantages compared to linear blowers and to guarantee the precise management of



To face the internal growing demand for mineral water under the Tsumagoi and Oku-Karaizawa brands, the bottling company turned to SMI for the production of 0.32l, 0.41l and 0.5l bottles in PET.

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the stretch rod cycle and accurate control of their position, as well as providing energy savings.

- ultra-compact system: the preform heating section (oven) is integrated within the stretch-blow moulding section (carousel) in a single compact module, which makes this system suitable even for bottling lines in limited space.
- reduced blower energy consumption, thanks to the preform heating module, equipped with high efficiency IR lamps and the stretch blow-moulding module with an air dual recovery system that allows the reduction of energy costs tied to the production of high pressure compressed air.
- the structure that surrounds the oven and the carousel is equipped with slightly rounded protection doors, which provide more space inside the machine so that cleaning and maintenance can be carried out easily and safely.
- the stretch-blow moulding system uses high performance low dead-volume valves that reduce pre-blowing and blowing times, therefore improving efficiency and the quality of the bottles produced.
- the machinery is managed by the MotorNet System for automation and control, which ensures constant maintenance of optimum processing parameters throughout the entire production cycle and the direct modification of the machine settings, thereby simplifying format changeover operations.



The staff from Tsumagoi during the factory acceptance test

When the container becomes competition

Over the last few years, the competition between companies in the mineral water sector has increasingly evolved around the price of the

product that needs to be low but high quality for consumers. To be able to maintain or increase their share of the market, bottling companies need to develop innovative solutions that are able to reduce production, running and distribution costs. All this requires careful analysis of the characteristics and performance of the bottles in PET that are used, analysis that persuaded the Japanese company Tsumagoi Meisui to create new containers that optimise the combination between the volume of the bottle blown by the SMI rotary stretch-blow moulder and the number of bottles contained in the cardboard box. Among the best formats, to reduce storage and distri-



The Tsumagoi Meisui Co. Ltd production plant

bution costs, Tsumagoi Meisui chose 0.32l and 0.5l square based bottles in PET and 0.41l and 0.5l cylindrical bottles.

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Interview with Minoru Toyota President of Tsumagoi Meisui Co. Ltd.

What is the key to success for your company?

Without a doubt one of the main factors in our recent success was the opportunity offered by new sales channels, or more precisely, we changed from a traditional type of "business", that of selling our products through distribution points, shops and supermarkets, to one of "e-commerce", managed directly by head office.

What are the current market trends for your reference sector?

In the world of mineral water, the main criterion of consumer choice is the price of the product. In fact, everyone whether final consumers or bottlers (in the case of working with third party), ask us for cheap products. For this reason Tsumagoi Meisui Co. Ltd, the same as every other company which bottles water, needs to compete on the market by keeping the production costs and sales prices low, and with this aim, developing innovative solutions that are able to offer products that are increasingly competitive.

What are the main factors that led Tsumagoi to invest in a new stretch-blow moulder supplied by SMI?

The main factor that led us to choose an SMI system, rather than another brand, was the

compactness of the machine from the EBS K range. The new range of SMI blowers stands out from others, with its unique, compact module that integrates the preform heating section (oven) with the stretch-blow moulding (carousel), this technical configuration fits perfectly within the available space inside our production factory.

In your view, what are the main challenges for future expansion?

The biggest challenge that we need to face for future growth, is certainly the development of solutions that guarantee the best combination between "bottle capacity and volume" and "the number of bottles in a cardboard box", with the aim of optimising storage and distribution operations and reducing their costs.

What were the biggest challenges that in the "business" of mineral water Tsumagoi has overcome?

Working with head office, we faced and overcame a demanding programme to reduce the physical costs of distribution, the success of which depended on the creation of new bottles in PET with particular characteristics, which reduced the cost of packaging materials, such as bottles without labels.