



Water bottling line from SMI at société Source de Batna in Algeria

A taste of Algeria

In the eastern part of Algeria, east of the Saharan Atlas Mountains, are the Aurès mountains, from which water bottled by the Société Source de Batna flows naturally. In order to increase the production capacity of its PET line for filling its 0.33, 0.5, 1 and 1.5l cylindrical PET bottles, the Algerian company recently turned to SMI for the engineering study and installation of a new 10,000bph PET line.

The Société Source de Batna manufactures and markets the still and sparkling mineral water of the same name, which is highly appreciated not only for its taste and lightness but also for its digestive properties, which arise from a particular chemical composition. These digestive properties were already known to the ancient Romans. The mineral water has many benefits for the kidney and liver functions and in the treatment of obesity; it is also recommended for children, the elderly and pregnant women.

Initially the Algerian company was state-owned; in 1990 a devastating fire destroyed the factory. Following an extensive re-building, the company was subsequently sold to private entrepreneurs. Since 2005, the Société Source de Batna has been part of the Algerian industrial Attia Salah group.

The Groupe Industriel Attia Salah, based in Batna (Algeria), is an industrial complex operating in the beverage industry with the production of the Batna mineral water and in the construction sector with the production of tiles and wire mesh.

Batna ... a chequered history!

Batna is the principal city of the province of Batna (or Wilaya of Batna) that, with 292,943 inhabitants (2008 figures) is the fifth largest province in Algeria. It is also a major centre of the Aurès region, so named by the Romans after the highest mountain range in the area. Batna is located in the north-east of the country, on a natural pass of the Atlas Mountains, so well hidden that the Romans themselves were unable to find the passage during the first phase of their invasion. In 1844, the French turned it into a military garrison with the strategic task of creating a permanent and guarded access to the main road to the Sahara. Initially, the city was called "Nouvelle Lambese" but a year later it was renamed Batna.

The PET blowing filling capping line

The entire PET line for the bottling and packaging of Batna still and sparkling mineral water was designed, manufactured and installed by SMI. The new system includes an SR 6 rotary stretch-blow moulder for pro-



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In addition to the line, SMI has also designed the shape of the bottles for sparkling water.

ducing PET bottles of various sizes, a rinse-fill-cap monobloc, a rotary labeller, an LSK 35F shrinkwrapper, conveyor belts for moving bottles and packages and an automatic APS 3050P palletising system. For this project, SMI provided the customer with a turnkey system that includes, in addition to the aforesaid machines, various auxiliary equipment such as the compressor, control systems, etc. The line was added to other SMI machines already in operation in the Algerian bottling facility: an SR 10 rotary stretch-blow moulder, an LSK series shrinkwrapper and a handle applicator.

In the "system engineering" study of the new complete 10,000bph line and following a careful analysis of its customer's expectations, SMI presented an integrated solution that includes the installation of SMI-produced advanced technology machines together with some systems supplied by selected and reliable partners. The Algerian company had highlighted the need to be able to have more versatile and efficient production systems that would be able to quickly change pack formation by means of a few simple operations. All the machines

supplied by SMI in this turnkey line, from the SR 6 blow moulder fitted with six moulds to the 48-valve filler, from the automatic packer to the palletising system, are equipped with an automation and control system. This system coordinates the movements and functions of each line, in such a way as to create perfect synchronisation among all the machines in the line and an uninterrupted and linear production flow.

In the Batna facility, the existing Smiform SR 10 stretch-blow moulder will be used for the single-size production of only the 1.5l PET bottle of still mineral water, while the new bottling line supplied by SMI will process 0.33, 0.5, 1 and 1.5l PET bottles of still and sparkling mineral water. In addition to all the machines that make up the new production plant, SMI has also designed the shape of the PET bottles for bottling sparkling water.

Line management and automation

The complete line makes use of an automation and control system that, combined with the use of sensors, coordinates the movements

and functions of each line, in such a way as to create perfect synchronisation among all the machines in the line and an uninterrupted and linear production flow. The automation and control system provided by SMI in Batna was commissioned with the support of Smitec, which for years has been involved in multi-axis automation of industrial plants. Through the careful study of the line layout and the customer's production requirements, Smitec has designed and assembled a technologically advanced hardware/software integrated system, called VLS (VaryLine System) Pro, for the management, automation and optimisation of the new bottling and packaging line. This is a Profibus fieldbus-based product, which allows the running of the inverter-controlled motors of the machines in the line and which incorporates, in a single control station, both the PC that controls the conveyor belts and the man-machine multi-language interface equipped with a touch screen and simple and user-friendly function keys. With its compact size, this control station can also be placed in the production system's most strategic point.

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