

A.Water Systems Srl

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WS is a company, founded in 2005, working as process equipment supplier for the beverage industry. During these years, WS has achieved a very good reputation in the beverage industry field, managing to cooperate with the major global players, such as Coca Cola, Pepsi Cola, Nestlé Waters and Orangina-Schweppes, and with private investors installing new production facilities, quite often green fields, in emerging Countries. WS has met new standards for product quality, energy saving and maximum

plant output while complying with the strictest criteria for hygiene and safety. All the devices are entirely conceived and designed to guarantee the best requirements in terms of microbiological, physical-chemical and organoleptic properties; the entire production process and software development are managed internally, as well as installations and commissionings which are carried out with WS's own resources.

WS' products for beverage industry are:

- **water purification plants** (mechanical filtration, microfiltration, reverse osmosis, UV disinfection, sterilisation) designed according to the customer's exigencies and the chemical analysis;
- **sugar dissolving systems** (single batch, double batch and continuous up to 35.000 l/h);
- **semiautomatic and automatic syrup rooms;**
- **premix units;**
- **flash pasteurising units;**
- **ozone generators;**

- **carbonating equipment** (water, wine, beer, soft drinks);
- **in line syrup blending systems and ingredients mixing systems;**
- **steam sterilisable microfiltering systems** (juices, beer, wine);
- **mineralising equipment;**
- **equipment for preparation of non-chemical bottles rinsing and disinfecting solutions** (such as ozone) and **chemical solutions preparing devices** (peracetic acid, hydrogen peroxide, chlorine, etc.);
- **equipment for the preparation of sterile water;**
- **manual and automatic CIP systems.**

Thanks to its skill and process expertise, today WS is widely present worldwide even with turnkey solutions including ancillary equipment (cooling equipment, boilers, etc.). WS' philosophy is to manufacture high-quality and reliable equipment, equipped only with top brand components: Alfa Laval, Endress Hauser, Pall, Anton Paar, Siemens, Festo, Spirax Sarco are the typical components customers will find on their plants.

The choice of providing only state-of-the-art solutions has brought us to be appointed as officially authorized integrator by Alfa Laval. Between main technical references, WS can



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list the supply of two fruit juice tubular flash pasteurizers for aseptic filling to Orangina-Schweppes in France; furthermore, it's significant to point out that WS is included in NESTLÉ WATERS' authorized suppliers list for water purification systems: recently an important contract for the supply of a top-technology water treatment plant in the far East has been finalized.

Amongst last supplies (early 2016), WS also boasts a complete line for soft drinks production in Las Vegas - USA (Coca Cola co-packer): from water treatment to hot fill pasteurizer, through sugar syrup preparation and ingredients mixing, also including CIP equipment.

WS considers Customer Service one of the greatest keys to success: entire business, marketing, sales and profits depend on customers' satisfaction so the after sales team is constantly trained to perform the simplest solution in the shortest possible time to support the customer's business.

"BLENDSYSTEM M" Premix Unit

The growing market's confidence gained by process plants manufactured by WS, allowed a continuous development of blending technology for carbonated soft drinks (CSD) production to such an extent that it reached a very high level of specialisation in manufacturing mass controlled blending systems, named BLENDSYSTEM M.

BLENDSYSTEM M is a piece of equipment for preparing beverages, completely preassembled on a skid for an easy and quick shipment and installation, conceived mostly for the production of carbonated soft

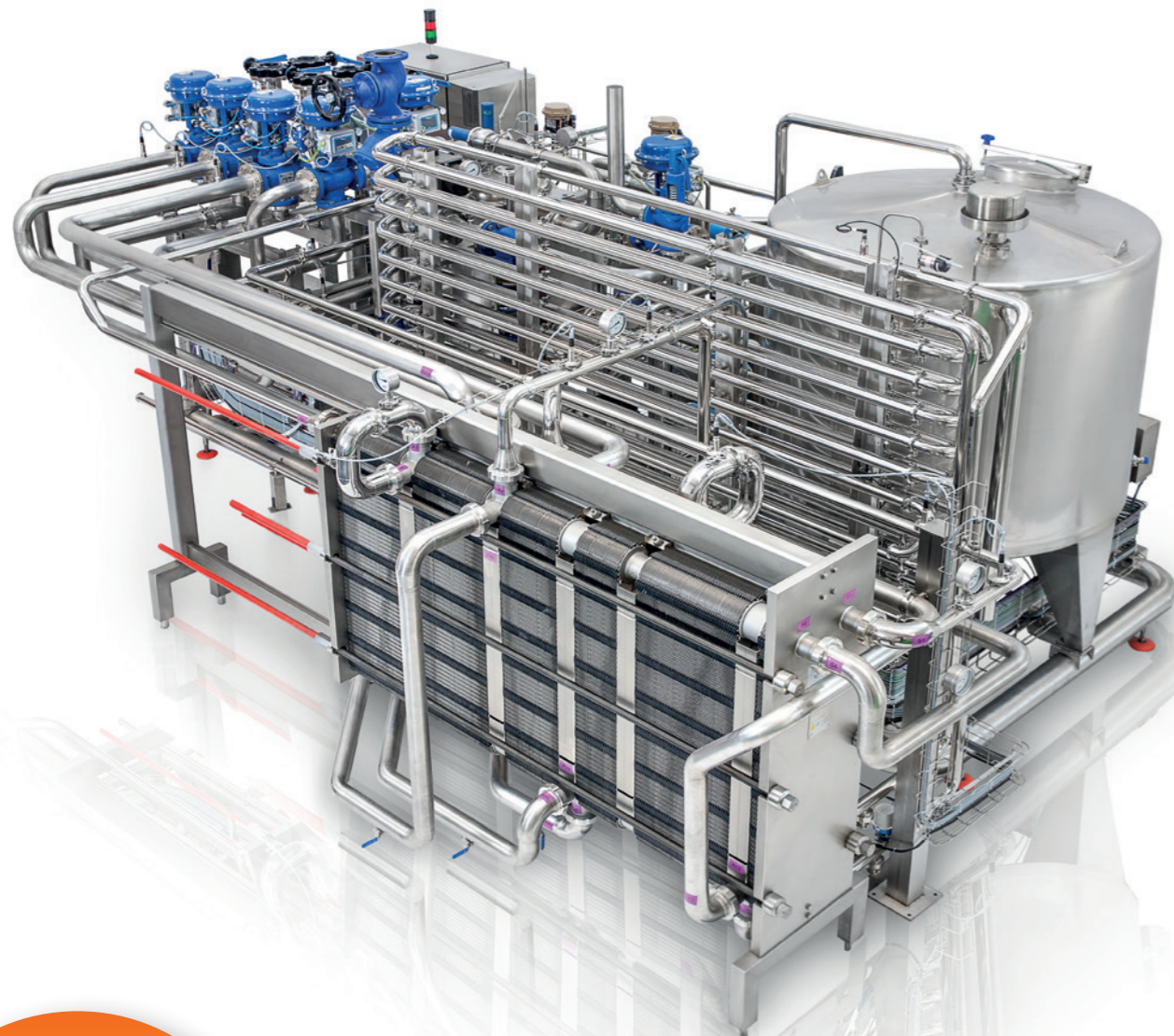
drinks (CSD), but also carbonated mineral water (CMW) and still water (charged with nitrogen in order to increase the mechanical resistance of the bottle). The required quantity of ingredients (water, syrup, and CO₂) is carefully measured and dosed in an electronically controlled continuous process.

The whole system, realized to guarantee the highest qualitative standards and a qualitatively constant production, also running in conditions of considerable format change, is completely preassembled on stainless steel circular-section skid for an easy and efficacious cleaning. It usually includes the following subsystems:

- inlet water deaeration: a vacuum pump removes incondensable gases; the pump is conceived to maintain the dissolved oxygen level below 1 ppm values;
- carbon dioxide dosing (or nitrogen in case of still mineral water production): a modulating valve and a mass flow rate transmitter inject carbon dioxide in quantity that is proportional to water quantity loaded to the deaeration tank;

the water flow rate is usually measured by a magnetic flow rate transmitter, which may be replaced with a mass flow rate transmitter in case water presents a very low electrical conductivity level. A special gas injecting and mixing system - specifically developed by WS - performs a careful mixing with the water to be treated and, hence, best results in terms of product perlage; the carbon dioxide contents is maintained constant in the product receiving tank by a supervising software, which checks possible fluctuations in feeding water temperature and product buffer temperature; the effective dissolved carbon dioxide contents in the product is checked using a carbometric unit, installed in by-pass on the filling machine feeding line;

- syrup dosing and mixing: at first syrup is stored in a small buffer tank, whose atmosphere is modified and enriched with carbon dioxide in order to avoid oxidation occurrence. Syrup injection is made by a sanitary design modulating valve and a mass flow rate transmitter in





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a quantity which is proportional to the water amount fed from the deaeration tank; furthermore, using the mass flow rate transmitter, it is possible to check constantly the effective density of the inlet syrup and therefore to compensate immediately for the dosing and to stabilize the sugary concentration in the end-product within established bounds (usually $\pm 0,05$ °Bx). A specific refractometer installed in by-pass on the filling machine feeding line, allows the constant check of the product and, if necessary, its adjustment; similarly, the instruments minimize waste of both syrup and product during transitory phases of production, such as start and stop.

Furthermore, customized solutions for product cooling are also available, depending on the environmental conditions of the system installation.

The supervising software loaded on the mass premix unit - **BLENDSYSTEM M** - is conceived to guarantee the best results in terms of dosing, offering at the same time an easy control by a friendly user interface; this software enables on one hand to set the main production parameters and visualize their state graphically and on the other hand to set the statistics parameters (ca, cp e cpk) connected to that kind of production.

Using a more advanced version of this software, associated with specific instruments, it is also possible to control automatically saccharose inversion, so that the need of intervention by laboratory technicians is reduced.

The equipment is equipped with field buses (MPI, Profibus or Ethernet) for a complete integration in the bottling line and the control of production, cleaning and sanitizing processes.



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of technology*



- WATER PURIFICATION
- SUGAR AND SWEETENERS DISSOLVING
- CONCENTRATES PREPARING
- SYRUP STORAGE
- PASTEURISING
- DOSING AND BLENDING
- PRODUCT CARBONATING
- WATER OZONISING
- FLUIDS HANDLING
- CLEANING AND RINSING
- HOMOGENIZING
- TURNKEY PROJECTS

