

Conti-Stream MP 2000

The next Generation in Mix Processing



With the growing number of product changeovers encountered in the beverage production, Tuchenhausen Beverage Systems has developed an advanced In-Line Mix Processing system which significantly reduces product changeover times and losses.

Problem

With the growing number of product changeovers, the majority of existing mix processing systems are limited in their operational flexibility which results in:

- Longer product changeovers
- Higher product losses
- Greater product quality variations
- Higher operating costs

In addition, conventional systems require a larger number of preparation tanks which increases the investment costs.

Solution

The Conti-Stream MP 2000 offers higher operational flexibility by providing a better control during processing and product changeover.

The compact modular design allows the system to be custom arranged to fit the smallest of areas.

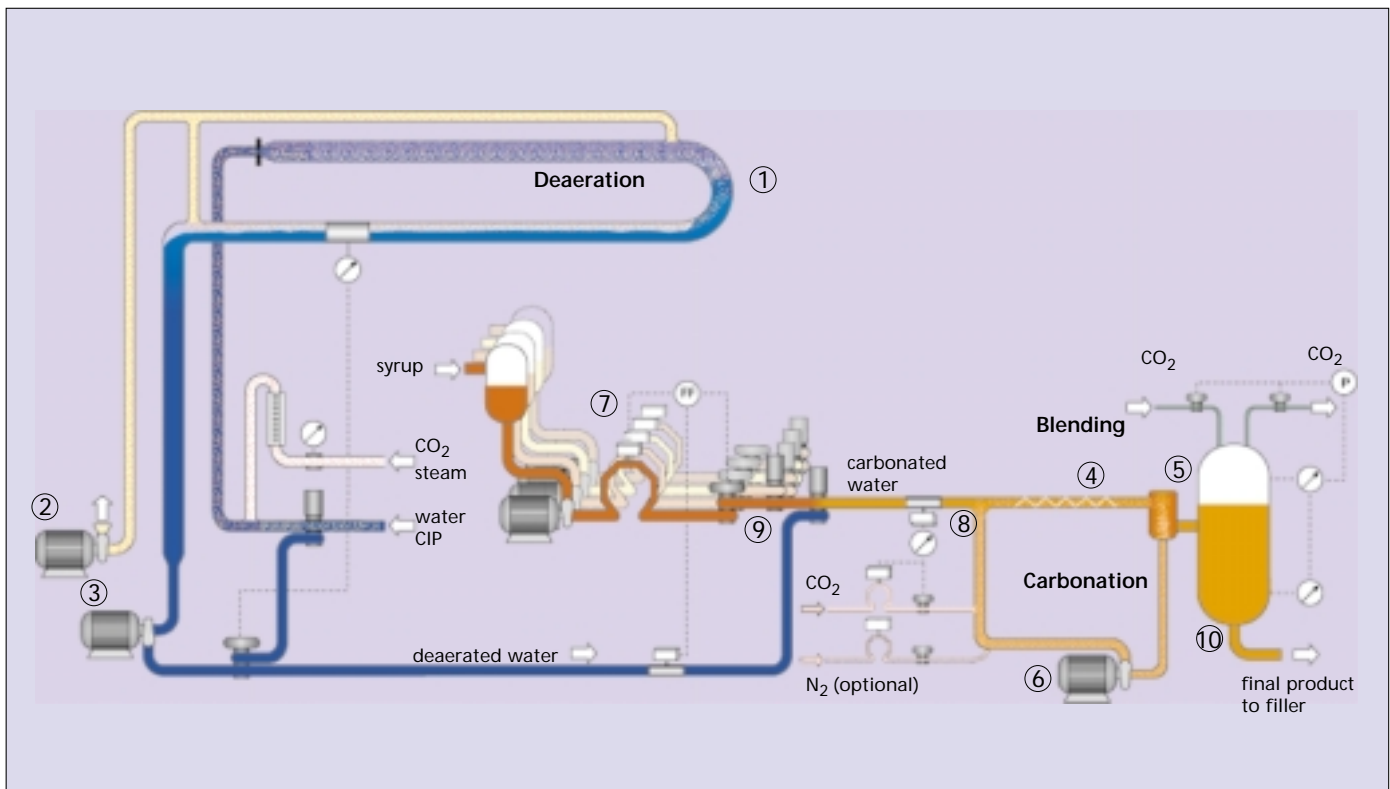
The Conti-Stream MP 2000 is designed for fast product changeovers at low product losses. Each process step incorporates In-Line technology to minimize the amount of in-process product.

A new, patent applied method for optimal syrup handling during changeovers reduces the syrup losses to a minimum.

The control system can be easily integrated with the syrup room and with filling systems, allowing for a very tightly controlled changeover process.

A problem encountered daily in bottling plants are large variations in product quality due to product changeovers and filling line fluctuations. The key to the solution is integrated In-Line process technology.

The entire plant, from the individual process steps to the control system, is designed to minimize product quality variations. Reduction in operating costs was a primary concern in the design of our new mix processing system. Low pressure drops in each process step minimize the energy required to pump liquids. The deaerator can achieve high levels of oxygen reduction without the use of CO₂. The patented carbonation system assures 100% CO₂ dissolution, maximizing yields.



Conti-Stream MP 2000

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|----------------|----------------------|------------------|-----------------|
| 1 Reactor pipe | 4 Static mixer | 7 Mass flowmeter | 10 Product tank |
| 2 Vacuum pump | 5 Hydrocyclone | 8 Flowmeter | |
| 3 Product pump | 6 Recirculation pump | 9 Control valve | |

Deaeration

The outstanding feature of the new Conti-Stream In-Line deaeration system is the patented reactor pipe which allows for true In-Line deaeration. This sanitary design does not only lower energy consumption but also reduces the overall investment costs.

Oxygen containing water is sprayed into the reactor pipe at a very low supply pressure of approx. 2.5 bar. The dissolved oxygen passes from the atomized drops to the gaseous phase and is evacuated by means of a pump. In the lower section of the reactor pipe, the gaseous phase and the liquid phase are separated.

If very low final oxygen concentrations are required, the option to add CO₂ as a stripping gas can be included.

Carbonation

Conventional systems have problems to completely dissolve large quantities of CO₂. Our patented hydrocyclone allows the complete separation and recycling of all non-dissolved gas bubbles which are entrained in the product. This method allows high gas concentrations in the circulation path, giving excellent conditions for optimum dissolution. The product is virtually bubble-free.

Features

- In-Line technology with automatic CIP steps
- Outstanding dosing technology
- New patent applied method for optimal syrup handling during changeovers
- Virtually bubble-free product with very good CO₂ bonding

Blending

This new generation of In-Line blending systems allows for independent, fully automated dosing of multiple product streams. Dry concentrates are dissolved in a special semi-continuous powder dissolving system before they are added to the product stream.

This unique blending system is also available as a superior two-stream blender. Its modular design allows a later upgrading to a multi-stream blender.

With product changeovers increasing, it is becoming important that blending accuracy is not affected by changes in volume flow rates.

We have intensively studied and simulated blending processes and found a way to adjust the systems in such a way that dosing inaccuracies due to flow rate fluctuations are practically avoided. This outstanding dosing technology (patent applied) gives a consistent product quality even during line fluctuations.



In-Line dosing

Benefits

- Very rapid product changeover
- Consistent product quality during line fluctuations
- Minimized syrup losses
- Highest product quality.
- Reduced foaming during filling

Control

- Local programmable control system based on systems available from the world market leaders
- Clear visualization and easy modification for up to 120 recipes
- Monitoring and optional recording of all process steps and parameters

- Signal exchange between syrup room, filler and empty container handling for optimized product changeover
- Online forecast of dosing and carbonation accuracy

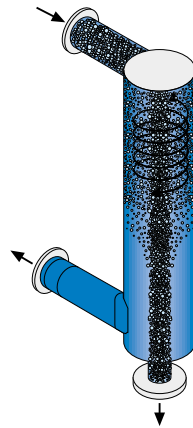
- Optional trend display for product changeover, downtimes, operator interventions, etc
- Optional online support for fault diagnostics, maintenance and service

Variants

- Additional units for direct and indirect water and beverage cooling, pasteurization and sterilization can be integrated
- Deaeration units integrated into the line or centrally arranged
- Nitrogenation of still products or combined nitrogenation and carbonation of lightly carbonated products

Performance

- Deaeration
Residual oxygen content 0.2 - 0.5 mg O₂/l
- Carbonation
Range 0 - 12 g/l (0 - 6 v/v)
Accuracy ± 0.1 g/l (0.05 v/v)
- Blending
Ratio 1 + 3 to 1 + 7 syrup to water
Accuracy < ± 0.5 %
< ± 0.05° Brix for sugar containing beverages
- Mix Processor System
Capacity up to 80 m³/h
Changeover time < 5 minutes
Changeover losses < 10 l of syrup



In-Line carbonation with hydrocyclone