



1,000 gallons of recovered beverage product – per tank, per day

United States

Case story

A major US beverage manufacturer was looking for a solution to more efficiently mix their highly concentrated flavored liquid, and to fully recover their entire product from a 5,000 gallon tank.

Another mixer's Achilles heel

The customer's concentrate mixing process begins by filling their tank with 1,000 gallons of clean water. Roughly 1,000 gallons of concentrate is pre-mixed separately and then blended into the 5,000 gallon tank. The tank is then filled with additional water to achieve the final liquid volume.

Previously, all mixing was accomplished by a top-mounted, high-speed and high-shear mixer, which didn't reach the tank bottom and resulted in ineffective mixing. The mixer was so ineffective that the customer was also evaluating a blend-up mixing process for the final 1,000 gallons of mixture. This remaining 20% of volume is considered the tank "heel," and it was simply emptied as waste – resulting in 1,000 gallons of lost product.

Alfa Laval learned of the project through a channel partner – where the customer inquired about our mixer after seeing it in operation at a trade show.

From waste to recovery

After a 4.5 hour presentation and demonstration, a ten-inch Alfa Laval magnetic mixer was recommended and installed at the bottom of the 5,000 gallon tank. As a result, every bit of product is now mixed in the "heel" portion of the tank, i.e. the 1,000 gallons of product that was previously considered waste.



The mixer continuously blends at a gentle 150 RPM – keeping the final mix concentration uniform before entering the filling stage.

100% yield and a production step saved

The continuous mixing process allows for a homogeneous mix, i.e. the mixer can continue to run while the tank is drained, allowing for 100% yield of the product. In this case, 1,000 gallons of product can be saved without any unnecessary waste. The magnetic mixer also saves the customer a production step. Since all ingredients and water can be homogeneously mixed in the same tank, an additional concentrate tank for pre-mixing ingredients is no longer needed – saving the customer an additional production step.

A continuous batch process – saving valuable CIP downtime and resources

Most beverage mixing processes using magnetic coupled mixers require a mixer to be stopped and disassembled from the tank prior to starting each new CIP cycle or batch. Alfa Laval's magnetic mixer saves valuable CIP time and resources, as once the beverage concentrate is homogeneously mixed and pumped into the filler stage, the process is complete.

Since the mixer can run at extremely low RPM, mixing speeds are reduced to the point where product can be drained, and immediately followed by CIP solution introduction into the same tank. And due to the levitating design, CIP solution flows freely to thoroughly clean all surfaces – allowing the mixer to continuously run and process CIP solution at the same time. As a result, even the CIP cycle is continuous, as there is no need to stop and disassemble the mixer. It also provides a more efficient CIP technique, eliminating unnecessary tank CIP equipment – ultimately saving more resources, allowing for additional up-time, and creating a continuous batch process.



Alfa Laval magnetic mixer – with motor

Beverage mixing benefits:

- **Levitating design** – allows for nearly 100% yield as the mixer runs at a very low RPM, recovering every last drop
- **Saves a pre-mix step** – all ingredients and water are homogeneously mixed in the same tank, saving an additional pre-mix production step
- **A continuous batch process** – due to levitating design and lower RPM, the mixer does not need to be stopped and disassembled during CIP – resulting in a continuous batch process

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The information contained herein is correct at the time of issue, but may be subject to change without prior notice.

How to contact Alfa Laval

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