Brewery toasts water savings

Toftejorg rotary jet head tank cleaning machine

Case story

Since installing two dual-purpose vessels equipped with Alfa Laval Toftejorg rotary jet heads, Manchester brewer, Joseph Holt has enjoyed 30 % reductions in water usage for regular Cleaning in Place (CIP) of its cylindro-conical fermentation and conditioning tanks.

Best-known for its traditional ales and mild, the Manchester-based brewer has, in recent years, complemented its award-winning beers with Crystal and Diamond; two own-brand lagers, developed to take advantage of the UK surge in lager sales over recent years. As sales of these premium brands have grown, so has the need for additional capacity for fermentation and conditioning.

Increasing capacity

Two 600 barrel Moeschle vessels were installed to meet this need, between them providing 1000 hectolitres of additional tank capacity. One of the tanks is used to ferment lager for seven days before it is transferred to the other tank, or to smaller existing vessels, where it is conditioned for three weeks.

Insufficient static spray balls

Both new tanks are 3.5 metres in diameter. According to Keith Sneard, Joseph Holt's Head Brewer, this made the tanks too big to clean using fixed spray ball technology. "At that size, we didn't feel a spray ball would have sufficient force to clean them effectively."

The tank makers recommended a rotary jet head cleaning system. Sheard had also had previous experience of using Alfa Laval Toftejorg jet heads in other parts of the brewery. Consequently, they opted for rotary jet heads from the start, installing Toftejorg TJ20G heads with 4 x 5.5 mm diameter nozzles. The new tanks supplement eight existing cylindrical conical tanks used to ferment, condition and store the lagers and a new smooth beer. Joseph Holt also decided to replace the original sprayballs in these vessels with the rotary jet heads as well. To meet the different flow demands of the rotary jet head machines and the traditional spray balls, Joseph Holt installed a 14 kw variable speed pump.

Rotary jet heads took away proteinaceous build up and decreased water consumption with 30% at Manchester brewer Joseph Holt.

Close inspection prior to commissioning of the vessels revealed that a light proteinaceous deposit had built up over time, despite regular cleaning with the original spray balls. After operating the new rotary jet cleaning system for a few months, they re-inspected the vessels which were, in Keith Sheard's own words, "now pin bright and like new".

An effective cleaning cycle

Each vessel undergoes a 40 minute CIP cycle consisting of a pre-rinse with cold water, a 2 % caustic phase and post-rinse with dilute peracetic acid which stays on the internal walls of the tank as a terminal sanitiser. Unlike spray balls, which

operate at high speeds and clean by deluging the internal walls of the tank, Alfa Laval Toftejorg TJ20G rotary spray heads are gear-driven, operate at low speeds and clean by impacting over a 360˚ indexed zone within a defined time scale. The cleaning fluid itself provides the power to drive the nozzles around both horizontal and vertical axes. The first cycle lays down a coarse pattern which is intensified by subsequent cycles. Cleaning is so effective that the rotary gear heads are certified to EHEDG guidelines.

Once the brewery began to measure water usage they were delighted to find that their new TJ20G rotary spray heads were positively miserly in their consumption. “Although we haven’t taken formal measurements,“ says Keith Sheard, “it is fairly obvious just by looking at our disposal costs that our use of water in that area had been reduced by around 30 %. In this day and age, that is a significant benefit.”

A dynamic rotary jet head, Alfa Laval Toftejorg TJ20G, out-performed static spray balls.

Découvrir la gamme des têtes de nettoyage rotatives Toftejorg

Voir la vidéo d'une tête de nettoyage en fonctionnement

How to contact Alfa Laval
Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com