

Brewery Plate Heat Exchanger Servicing

Introduction

Delta T Technologies (WA) recently had the opportunity to service a heat exchanger used for wort cooling at a craft brewery.

The heat exchanger had not been disassembled for some time and there were concerns that the product may be being affected.

Actions Taken

A new plate pack was purchased in preparation for the service. This was an unusual case where the cost of the complete plate pack was only 10% more than the cost of the gasket set.

The heat exchanger had been gas tested for integrity a few months earlier so there was little concern about cross contamination.

Covid related delays in the delivery of a replacement plate pack required the heat exchanger to be opened without spare parts being available.

The heat exchanger brand is not popular in Australia, with little representation, and no spare parts.

The heat exchanger has 4 passes with the wort entering from the top of the follower plate (back of the heat exchanger).

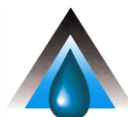
Results

The heat exchanger was opened, and the gaskets were found to be compressed raising some concerns about sealing the heat exchanger on reassembly.

A substantial amount of organic material was found in the first pass which was not being removed by regular chemical cleaning.

The heat exchanger was being cleaned after every brew, but the velocity was not high enough to remove the material found.

Once cleaned the heat exchanger was reassembled and pressure tested with no leaks found.





Conclusions

The issue of deposits in multipass heat exchangers is not new and has been observed in many applications, combined with relatively low velocities there is a high likelihood that material will become trapped in the heat exchanger.

A multipass heat exchanger is easily identified, if there are connections at both the head and follower plates

Changes have been made to the chemical cleaning process and pipework has been modified resulting in an easier back flushing process.

The heat exchanger will be opened again in 12 months' time to assess the impact of the changed chemical cleaning and back flushing processes. Spare parts have been ordered and will be with the client before the end of the month.

Please don't hesitate to contact me if you require any advice or a quotation on the maintenance of your plate heat exchanger.

