WORLD BREWING CONGRESS 2016

CRAFT MALTING - EXTEND YOUR CREATIVITY

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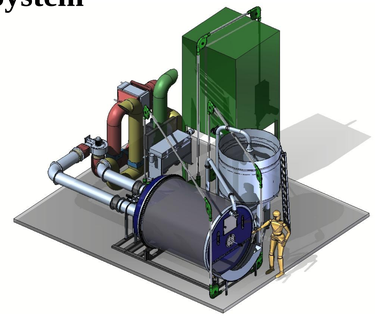
Introduction

Since the rollout of the Schulz Compact Malting System in 2013 several projects were realized by Kaspar Schulz. Existing malting companies or innovative breweries are highly interested in these technologies worldwide. After using hops, herbs or different yeasts, the playground of ingredients gets bigger. Thereby malt gets more and more focused in the “craft scene”.

The Schulz Compact Malting System

The four steps of malting steeping, germination, withering and kiln drying are managed by two plant components. Picture 1 shows an overview. In the centre you can see the silver steep. Left of it the blue marked germination and kilning drum. On top is the green marked grain logistic system and red marked the heating and cooling System on the left..



Picture 1: System Overview

Steep

The steep is a quite simple tank construction comparable to a CCT, completely made of stainless steel. The bottom of the cone is equipped with a punched plate. With that you are able to remove carbon dioxide during dry steeping. The nozzles of the aeration system are placed close to the outlet. In general we utilize a combined process of dry and wet steeping. Filling, evacuation and circulation is realized by a centrifugal pump. On top of the frame we have installed a circular gutter to remove floaters. These are conveyed automatically to a sieve to recover overflow water.

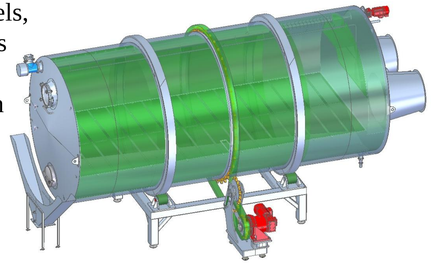
Picture 2: Steep

During circulation, shown on picture 3, the barley can be pumped in a circle via a spreader to get a Homogeneous mixture. Due to the short occupation time one steep can be used to facilitate up to 3 germination and kilning drums.

Picture 3: Steep -Circulation

Drum

After steeping the barley is transferred to the drum which is a rotating cylinder mounted on four wheels, shown on picture 4. The malt is Bedded on a slotted floor bottom. Attached to one end an air supply is installed which is automatically removed during rotation of the drum. The feed and discharge of the cereal is realized by a screw conveyor inside the drum.



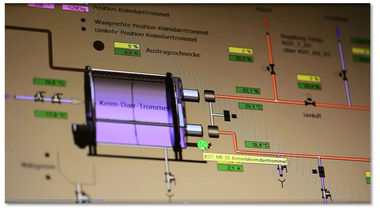
Picture 4: Drum

Next to the conveyor you can find on picture 5 the pipes and nozzles of the humidification. The temperature is measured with PT100 sensors. These are the only three installed fixtures inside of the drum. That reduces damage of the kernels during rotation to an absolute minimum and keeps thermal losses at bay. The drum is fully insulated to minimize thermal losses further. The slotted floor bottom can be removed completely through the man way. That way we are able to change the floor bottom. This is most likely necessary if you want to malt other cereals what perhaps may cause the requirement of a smaller clearance of the floor bottom.

Picture 5: Screw Conveyor

Automation System

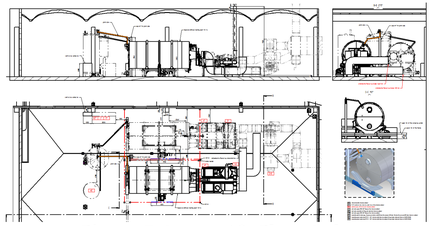
In order to provide a simple and reliable system, Schulz automated nearly every process of our malting plant. Thus the brewer or maltster only has to actively handle start of steeping, transfer after steeping, and the final transfer to the malt to the big bag. The automation system is based on Siemens S7 technology and visualized with Schulz Braumatik, shown on picture 6. This Software allows for example the administration of several recipes and provides the option of a remote control and maintenance with your personal computer or even smart phone.



Picture 6: Screen Automation System

Practical Impressions

One of the first plants was build in Umbria, Italy. An existing brewery started to produce their own malt. After one year of production the brewery installed a further drum to extend the malt production. After the extension of the malting plant, the brewery will be able to produce more than 80% of their total malt amount. Especially concerning malt quality and process reliability the first customers are very contented. By using an external smoker or oven also specialty malts can be produced in adequate batches, for example smoked or roasted malt.



Picture 7: Layout 10t Plant, Italy

Picture 8: 10t Plant, Italy

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