

Hop Systems



The “Green Gold” – factor of success and costs at the same time, particularly for craft brewers

The “Green Gold” is of crucial importance for the global success story of craft beers, since the combination of different types of hops results in unique sensory properties, that the consumer appreciates and honours accordingly. The brewmaster can support this factor by means of technological adjustments, such as the time of hop dosing, either in the brewhouse or in the fermented beer, the so called “dry hopping”.

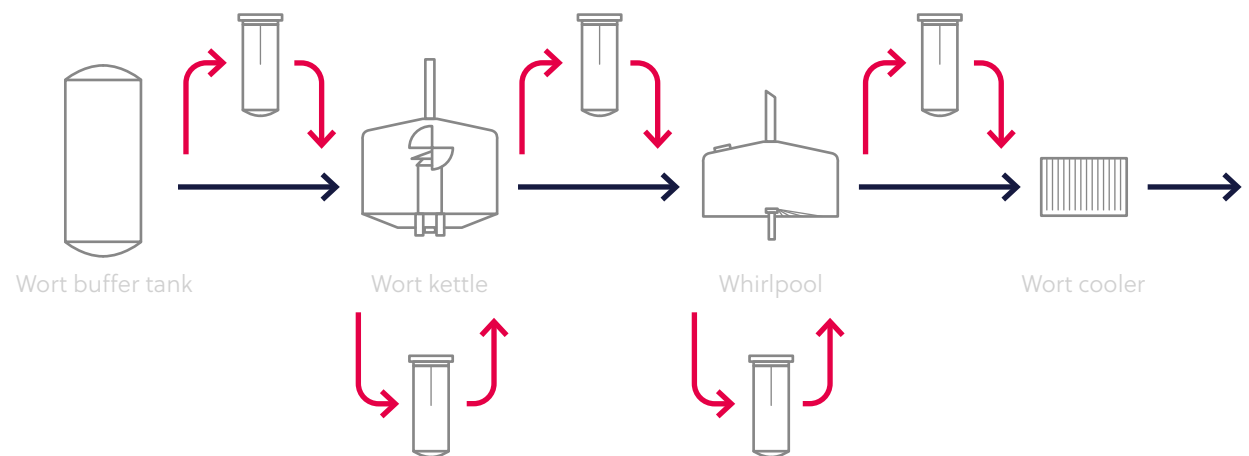
However, the high hopping rates in the craft segment lead to corresponding raw material costs.

In addition, the shorter and colder extraction processes result in lower hop yields and higher beer losses due to the larger trub quantities. Moreover, it is difficult to ensure the desired consistency of flavour and bitterness manually.

Consequently, the demand for fully automatic hop dosing and extraction systems for cone hops and pellets is steadily growing. Ziemann Holvrieka has faced this challenge by offering two processes – **Hop Back** and **Hop Slurry** – in its portfolio. With these processes, the corresponding hop strategy can be implemented, both sensorial and economical, to the craft brewer's fullest satisfaction. **Hop Back** is located in the brewhouse and suitable for cone hops or other spices and aromatic plants, whereas **Hop Slurry** is used for the dry hopping with pellets.

Last but not least, Ziemann Holvrieka's well proven hop dosing systems are available, with which hop extracts and pellets can be added fully automatically at any time of the wort boiling.

Possibilities of hop dosing in the brewhouse



Even suitable for large beer volumes - the Hop Slurry dynamic dry-hopping system

In the Hop Slurry dynamic dry hopping, beer is fed from the storage tank in the ratio of 30:1 to a dissolving and dosing module for hop pellets, prefabricated on a frame.

This module consists mainly of a stainless steel vessel as well as the necessary pumping, dosing and control units.

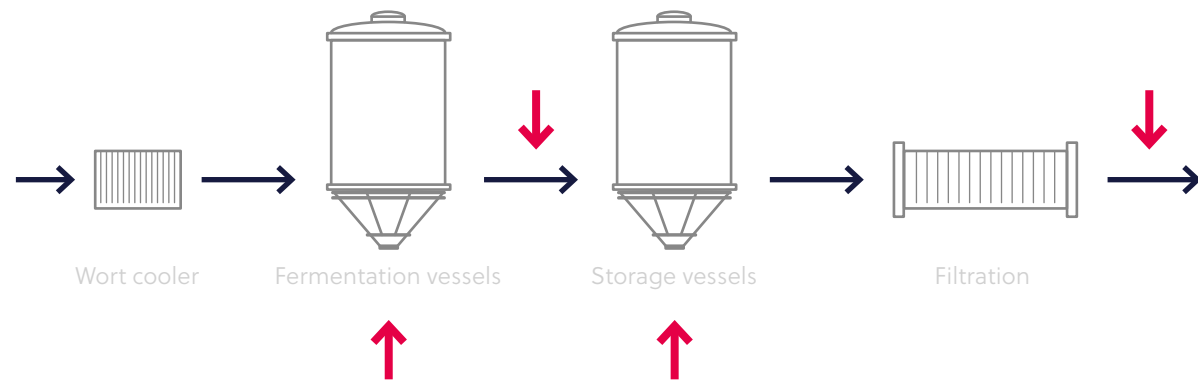
The pellets are added to the vessel. Afterwards the air is displaced out of the system by means of CO₂ in the upward flow, which reliably prevents an oxygen uptake of the beer. Then, the vessel is filled with beer, which is circulated through the pellets for a defined time and with different flow directions. Due to this very intensive mixing, a homogeneous hop-beer suspension is formed.

This suspension is then pumped back from the **Hop Slurry** into the storage tank, into which it flows tangentially. After a rotation phase, hops and residual yeast settle in the tank cone. The clarified beer is drawn off via a clear outlet, which begins above the hop and yeast sediment and leads out of the tank cone via a flange. Therefore, only pre-clarified beer reaches the filtration. The sediment is finally discharged via the cone of the tank.

This dynamic dry-hopping process is, on the one hand, easily reproducible. On the other hand, the hop yield is significantly improved compared to the classical static dry hopping. Physically this can be explained by the fact that in the static dissolving process the mass transport

is based on a purely concentration-driven diffusion process. In the case of the dynamic dry hopping, on the contrary, the circulating medium accelerates the mass transfer enormously, comparable to the heat transfer by forced convection.

Possibilities of hop dosing in the cellar





Automatically high yields - the **Hop Back** dynamic hot wort hopping

The **Hop Back** dynamic hot wort hopping consists, in simplified form, of a larger dosing vessel with an integrated sieve unit. In this sieve unit the cone hops are added and the vessel is then filled with hot wort.

The inflowing wort can be controlled via an upper and a lower inlet, depending on the filling level of the **Hop Back**. The defined hop-flavoured wort is pumped back to the wort kettle. The sieve unit reliably separates the spent hops. The wort remaining in the spent hops can finally be obtained by means of a clear outlet with sieve unit, installed in the bottom of the vessel.

With **Hop Back** the hop dosing can take place at very different times during the brewing process. The hop dosing is possible during the wort boiling as well as between the wort kettle and the whirlpool or between the whirlpool and the wort cooler. The entire **Hop Back** process including its cleaning is automated. Only the hops must be filled or removed manually.

By the way: With a **Hop Back** not only cone hops, but also ingredients such as coriander seeds or citrus peels can be extracted and dosed.





Thank you for your time.

For all enquiries, please contact one of our sales team at a Ziemann Holvrieka office near you.

Scan the QR code or visit www.ziemann-holvrieka.com

