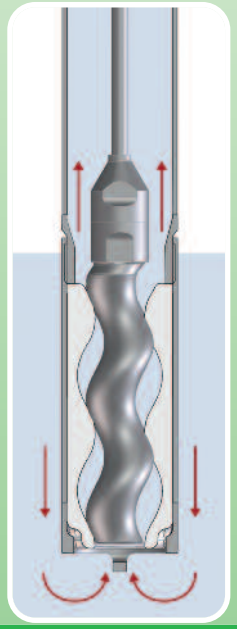
Isomerized-Kettle-Extract (IKE) Dosing

The Isomerized-Kettle-Extract (IKE) offers a lower viscosity than the products CO_2 extract, ethanol extract and Light-Stable-Kettle-Extract (LSKE). That means this extract is more liquid. From this reason we use a eccentric screw pump as a immersion pump in our removal and dosing station.

The fluid quantity is determined volumetric by the pump rotary speed. In case of a barrel change the already extracted volume will be stored in the control system and thus is guaranteed that a exact dosing quantity flows into the brew. This construction is equipped with a PROFIBUS module and communicates with the existing brewhouse control system. The brewhouse control system specifies the volume of Isomerized-Kettle-Extract (IKE) and the point in time of dosing. Furthermore the brewer will be informed about the necessity of barrel change and the dosing quantity.



Removal principle of eccentric screw pump as a immersion pump

Advantages of fully automatic hop extract dosing

- More cost-effective purchase of CO_2 extract, Ethanol extract and Light-Stable-Kettle-Extract (LSKE) thanks to larger packaging units of 200 kg barrels.
- Market leader in quality, because it is not necessary to heat the product and oxidation is excluded even over long operating periods thanks to a closed suction and delivery system.
- Significant increase (10% and more) of iso-alpha acid production in CO_2 and ethanol extract.
- Simple and effective solution for homogenizing the CO_2 extract. Ethanol extract and Light-Stable-Kettle-Extract (LSKE) does not have to be homogenized before dosage.
- Easy PROFIBUS integration in the brewhouse control system.
- The volume of extract to be dosed is calculated according to the alpha acid content of the dosing product. This evens out alpha acid fluctuations in the extract.
- Complete QA through integration in the brewhouse control system.
- Less manual handling, less logistics in hop extract dosing compared to can dosing.
- Minimum operating costs, because the dosing system works without heating of the product.
- Easy and safe operation.
- Practically maintenance-free system.
- CIP of the product line and dosing unit is not necessary.

COOLSYSTEM®

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Cold, oxidation-free hop extract dosing

COOLSYSTEM®

The Principle

CoolSystem and ViscoTec have designed a new hop extract homogenization and dosing system for 200 kg barrels, which empty and operate the dosing fully automatic. The extract dosing is delivered using a progressive cavity pump. The system pumps the extract cold, tested at a temperature of -3 °C, conservatively and free of oxidation. The equipment is compact, easy to install, maintenance free, low in energy consumption, extremely cost-effective and significant boost of the alpha acid isomerization effectiveness. This technology sets new standards. The videos at **www.cool-hopextract-dosing.com** show the system function.

How it works

The barrel emptying station consists of an electrical control system (1), a pneumatic control system (2), a follow-up plate (3) and a progressive cavity pump and pneumatic cylinder system (4).

The follow-up plate (3) is pressed pneumatically onto the cold hop extract and the air is vented manually or automatically.

The progressive cavity pump (4) sucks the product from the surface and pumps it via a 3 m tube directly to the kettle or another point of injection.

The delivery volume is controlled by the driving speed of the pump motor. In the case of a barrel change during a dosing operation the electrical control ensures that the required delivery volume is achieved.

The emptying station is equipped with a PROFIBUS module for communicating with the brewhouse control system which determines the volume of hop extract and dosing time. The brewer is also informed of an imminent barrel change, remaining barrel content and dosage volume.

Technical Facts

Equipment dimension: 0,9 x 1,2 x 2,5 m (w x l x h)

Dosing rate: 2 – 12 kg/min.

Dosing accuracy: +/- 1%

Residual amounts in barrel: below 1%

System has been tested with ethanol extract and CO_2 extract.

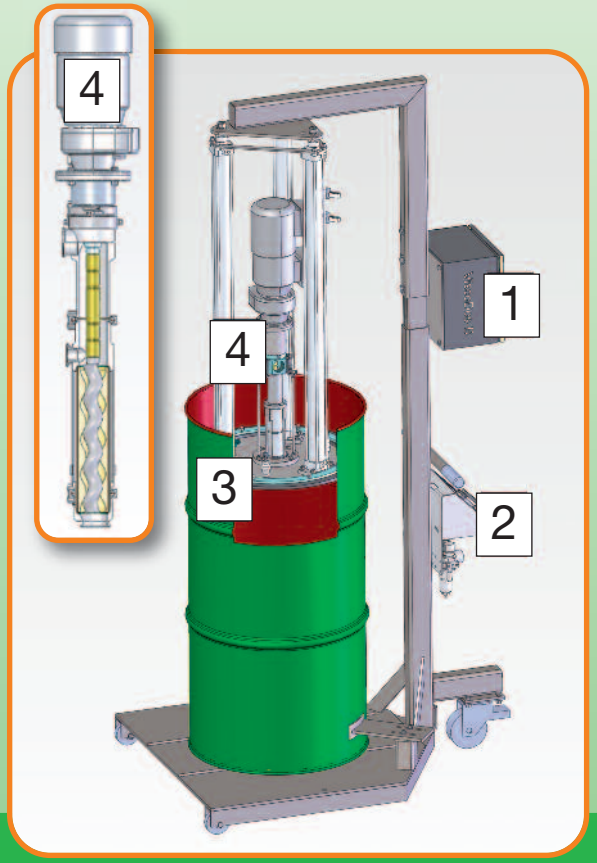
Ethanol extract and Light-Stable-Kettle-Extract (LSKE) does not have to be homogenized before dosage.

CO_2 extract should be homogenized with a drum hoop mixer.

Power supply: 230 V, 50 Hz, 1 phase – PROFIBUS module included

Power consumption: 0,55 KW

Compressed Air: 6 bar



simply smart

Example

Through increasing of iso-alpha acid production and can packaging elimination, is the investment in a automatic hop extract dosing system also profitable for smaller brewhouses.

For example:

Brewhouse capacity 270 Hl/brew, 2,500 brews per year. The alpha acid dosing per can be reduced from 2 to 1,8 kg due to higher alpha acid production

Thus the brewery saves 2,500 brews x 0,2 kg/brew = 500 kg alpha acid dosing. At the moment this complies with **a saving of EUR 15,000.00/year.**
The savings can be multiplied fast due to increasing of extract prices.

The brewery replaces 12,500 cans filled with hop extract through approximately 42 kegs filled with 200 kg extract. Therefore the **packaging costs** will be reduced by approximately **EUR 5,000.00**

Even all these provable advantages arise a very fast ”return-on-investment”.

Further cost advantages evolve from

- less manual handling,
- waste reduction and
- less logistic for hop extract dosing out of barrel/ keg, compared to ”can dosing”.