

Major cost savings are guaranteed by using our environmentally friendly hygienic vacuum systems in all beverage filling processes. Potential savings through the reduction of water consumption are of critical importance to the beverage industry in today's markets.



A Reduction of water consumption

> 99%

with

Hygienic Vacuum Systems

- ✓ **closed service fluid cycle**
- ✓ **clean in place (CIP) capability**
- ✓ **biologically safe**
- ✓ **robust and reliable vacuum generation**
- ✓ **short return-on-investment time**

Due to our considerable experience in the beverage industry, we are able to provide the very latest solutions in the reduction of water consumption. Using our hygienic vacuum beverage filling processes it is possible to save more than 99% of your water consumption. The return-on-investment time for a hygienic vacuum system depends on its initial cost and the savings of the associated service fluid.

Hygienic Vacuum Systems - SIH^{sanivac}

Performance range:

Suction volume flow: max. 1000 m³/h
Suction pressure: max. 33 mbar



Range

The SIH^{sanivac} is able to handle a suction volume flow up to 1000 m³/h. The range consists of three sizes.

- SIH^{sanivac} 400
- SIH^{sanivac} 800
- SIH^{sanivac} 1000

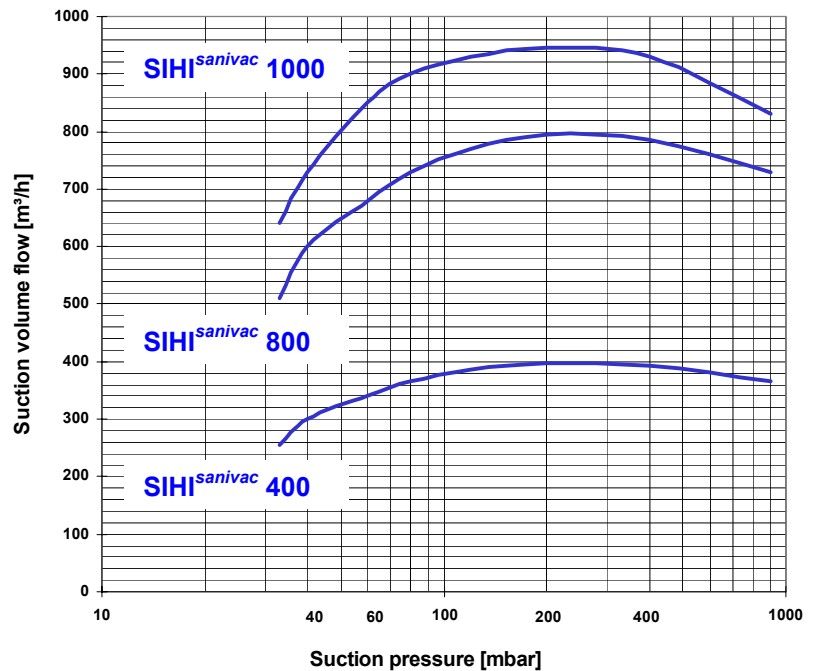
Cooling liquid

For cooling of the heat exchanger different cooling liquids can be used.

- brine
- cooling water
- associated liquids

Fittings

All fittings like automatic valves, temperature sensor and level indicators are designed to the hygienic standard. It is possible to use the leading suppliers of fittings.



Description

The heart of the hygienic vacuum system uses the established and respected compact SIHI liquid ring vacuum pump. Depending on the required suction volume capacity can, if required, be met using two vacuum pumps.

To separate liquids and foam from the drawn gas on the suction side we have installed a level indicated separator. The compression heat of the vacuum pump is removed by a heat exchanger, which can be "cleaned in place" and operates with the product, cooling water, brine or other associated liquids.

The service liquid is separated and derived from the pumped gas by the service liquid separator. Separators, pipes, fittings and pumps are manufactured from stainless steel (1.4404, 1.4408).

Unlike conventional vacuum systems this system ensures all pipes, separators and fittings of the hygienic vacuum system can be "cleaned in place" and provides maximum safety levels against microbiological contamination.

The "clean in place" function of the hygienic vacuum system can be easily integrated into existing CIP systems. All components are mounted on a stainless steel baseplate.

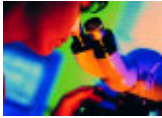
CIP capability, biologically safe and robust

✓ CIP capability



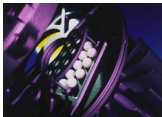
Sterling SIHI hygienic vacuum systems are designed to ensure a biologically safe system through the use of a hygienic design. All components are manufactured in stainless steel and the welded joints are passivated. The heat exchanger is also designed to meet the hygienic design standards and all EMSR-components and valves can be "cleaned in place". It is possible to drain the complete system and integrate it into an existing CIP system and into the process control systems of the filling plant.

✓ Biologically safe



Conventional vacuum systems with close service liquid circles are not biologically safe and they are therefore a risk to the process. After some operating hours the drawn liquid, for example beer, is concentrated in the service fluid and this becomes an optimal culture medium for bacteria if the temperature is in the range of 18 to 28°C. Infection of the process happens after a short operating time due to the existing microbes and the contamination of the service fluid. Conventional vacuum systems cannot be cleaned reliably if they are only flushed with a CIP fluid and therefore they do not fulfil the requirements of the food and beverage industry. Only hygienic vacuum systems will guarantee the highest level of a biologically safe filling process.

✓ Robust vacuum generation



For over 80 years Sterling SIHI has maintained its position as a leading supplier of liquid ring vacuum pumps, liquid ring compressors and dry running vacuum pumps to a wide range of process and related markets. Close contact is maintained with customers to ensure that product development is geared to market place needs. This is supported by investment in "state of the art" manufacturing to promote consistent quality.

✓ Short return-on-investment time



By using our hygienic vacuum systems in the areas of filling plants, it is possible to save more than 99% of the water consumption. The return-on-investment period for these hygienic systems is considerably shortened. If your considering investing in an economic filling system please keep in mind the cost savings of our hygienic vacuum system solutions.

Example: Vacuum pumps with an open service liquid circle installed at a filling plant needs approximately 2 m³ water per hour. The average cost for water can be calculated at 2.0 Euro per m³. Due to the total water consumption of the vacuum pump the following savings can be achieved:



Benefits of hygienic vacuum systems

- ✓ no water consumption at filling process due to hygienic and "clean in place" design
- ✓ environmentally friendly as well offering cost savings
- ✓ reliable vacuum generation
- ✓ highest level of biological safety
- ✓ using existing CIP systems
- ✓ short return-on-investment period



By using our hygienic vacuum systems you can improve your filling process in a biologically safe and economically efficient way.

Please consult our vacuum experts for a cost saving solution. We offer the information needed to make an educated and reliable process decision.

Addresses worldwide see: www.sterlingfluidsystems.com