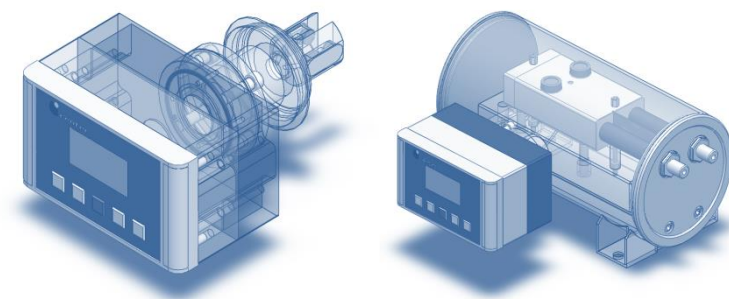


## The Centec Group

Centec is a privately owned group of companies. Our automated process skids are used throughout the entire brewing process. For soft drinks, dairy and food industries we offer a large variety of skid mounted systems. We have decades of experience in water purification and deaeration, carbonation, liquid blending and dosing, flash pasteurization and cleaning-in-place. Centec technology includes a range of high precision process sensors for accurately measuring critical product properties such as extract, alcohol, milk fat, O<sub>2</sub> and CO<sub>2</sub>. The largest brewery, soft drink, dairy and food groups in the world are among our key customers.



**Accuracy. Reliability. Centec.**

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# Vortex Injector

## Venturi Nozzle for Injection of Gas

## Centec Beverage Systems



Automated  
process skids  
and high precision  
sensors from a  
single source.  
**Centec.**

# Vortex Injector

## The Principle

The Centec Vortex injector is a hydrodynamic nozzle for the injection and dispersion of gases into liquids. There is a large number of applications that require e.g. O<sub>2</sub>, CO<sub>2</sub> or N<sub>2</sub> to be quickly and homogeneously added to beverages, wort, water or other types of cold or hot liquids. To always achieve optimal results, each Vortex injector is specifically designed according to the application duty and the products involved. Due to the design of the nozzle, the liquid is accelerated to reach a critical velocity before it enters the swirl chamber. Inside this chamber the gas is injected perpendicular to the product flow – sometimes from several directions. Due to high turbulence in the swirl chamber, the fine gas bubbles mix quickly and homogeneously with the product. The efficiency of the Vortex technology minimises the size of the Carbonation units e.g. for adding pressurized carbon dioxide to beer, soft drinks and sparkling water. For instant and automatic adjustment of the gas flow, each skid can be designed to include a process control system, a dosing control valve and a highly reliable CARBOTEC or OXYTRANS sensor installed at the outlet, to monitor the product and to provide control feedback.

## Technical Data

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| Capacity              | 10 - 2.000 hl/h                                                                                                 |
| Diameter              | DN20 - DN150                                                                                                    |
| Pressure of Operation | 1 - 10 bar                                                                                                      |
| Material              | 1.4301/1.4404<br>AISI 304/316L                                                                                  |
| Gasket                | EPDM                                                                                                            |
| Options               | in-line O <sub>2</sub> /CO <sub>2</sub> measurement<br>pressure retaining valve<br>dosing valve<br>booster pump |



The Centec production is certified according to ISO 9001.

- **Application Specific and Energy Efficient**  
designed according to process and product characteristics  
injection of gas in very fine bubbles from various directions  
quick and homogeneous mixture of product and gas
- **Process Skid with Standard PLC on Demand**  
for instant and automatic adjustment of the gas flow
- **Hygienic Execution and Full CIP Capability**
- **Outstanding Price-Performance-Ratio**

## Experience. Expertise. Centec.

*Ion Exchange · Reverse Osmosis · Membrane Deaeration · Column Deaeration · Hops Pre-Isomerization  
Wort Aeration · Yeast Pitching · Nitrogenation · Carbonation · Carboblending · High Gravity Blending  
Multi Component Mixing · Additive Dosing · Flash Pasteurization · Cleaning-in-Place · Dealkoholization*

