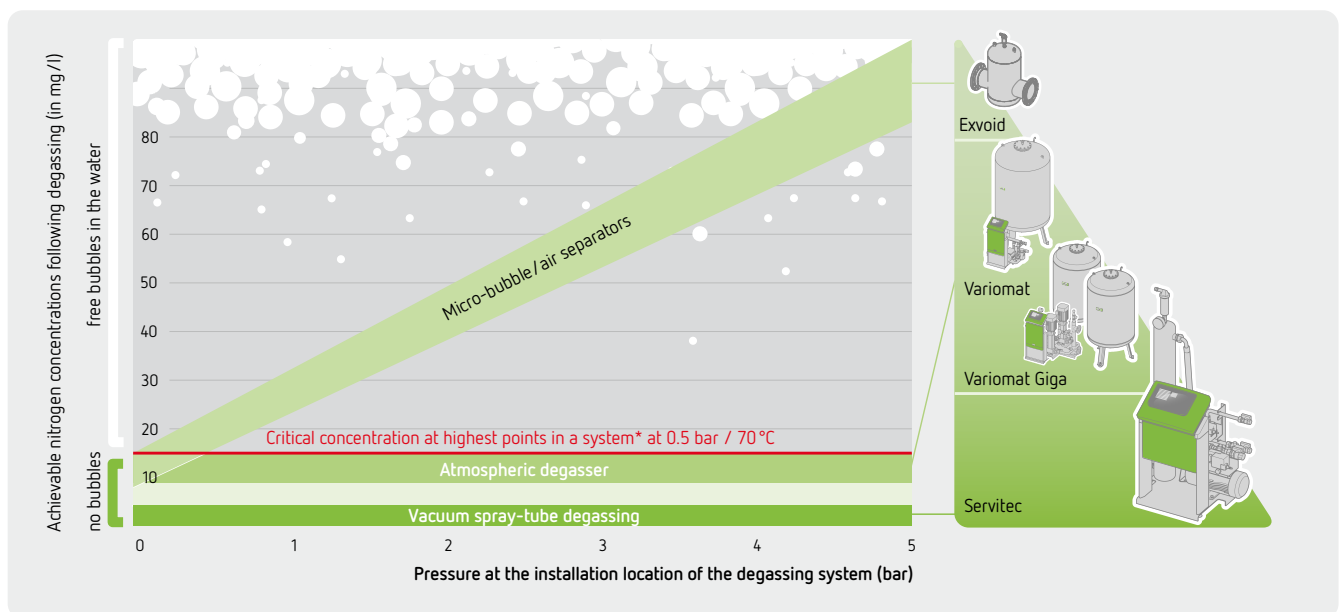


Reflex degassing and separating products: A comparison

To visualise the effectiveness of the various degassing systems, we want to show the physically and technically possible minimisation of nitrogen content in tap water, depending on the pressure conditions at the location of installation.

Nitrogen was used as the measuring gas as—because of its inert nature—it is not used up in secondary reactions and therefore does not distort the measurement result.



Degassing performance of Reflex products

Mechanical air separators: **Exvoid / Extwin**

Can only extract free gas, not dissolved gas. They are most effective when installed at the absolute highest points. Since most facilities nowadays are designed with the manifold at the bottom, however, they are usually installed in less favourable, lower positions which compromises effectiveness enormously.

Atmospheric degassers: **Variomat**

Can prevent free gas bubbles in the circulation water. Are best suited as centralised venting systems but not specifically for oxygen extraction. Erosion caused by two-phase flow can be largely avoided.

Vacuum spray-tube degassing: **Servitec**

Can reduce the entire gas content to virtually zero and combats both corrosion (reactive gases) and erosion (inert gases). Gas solubility is virtually zero in a vacuum. Nevertheless, the degassing performance of static vacuum degassers is poor because of the idle vacuum. Excellent degassing performance is only achieved through stimulation, e.g. by spraying water in the vacuum (vacuum spray-tube degassing). Consequently, vacuum spray-tube degassing is one of the most efficient technologies available in the marketplace.



- Gas undersaturation at the critical system point* can only be achieved with degassers.
- Vacuum spray-tube degassing can achieve virtually complete elimination of the gas.
- When filling or topping up using vacuum spray-tube degassers, undersaturation is achieved and, above all, the oxygen content in the filling water is reduced by about 2/3.

* Critical system point (KP) = point during operation at which the greatest risk of bubble formation exists (e.g. highest points, heat generators, control valves, pumps), which must, however, be prevented to avoid malfunctions. It is the reference point for calculating the achievable gas saturation performance of degassers and gas separators.