



# Fizz, Flavor and Flow

How to Optimize Taste and Space with Inline Gas Infusion



# Introduction

When it comes to bubbly beverages, many of us immediately think of fully carbonated options like beer, soft drinks, sparkling water, and sparkling wines. First bottled for sale back in 1835, carbonated water offered consumers the exciting tongue tingling sensation of fizz for the first time. Since then, and with the addition of different flavor profiles, carbonated drinks have dominated western culture.

While carbonation has ruled the drinks industry for more than a century, nitrogen-infused beverages have broken onto the scene in recent years. The flavorful, creamy mouthfeel, mesmerizing visual, and subtle, sweet notes of nitrogen-infused drinks have captivated many of us, earning a favoured place on our taste buds.

In fact, the global nitro-infused beverage market is projected to undergo substantial growth in the coming years. Data from Grand View Research estimates a market value of \$394.8 million by 2030 - representing a compound annual growth rate of 20.6% when compared to 2022.

Beverage providers are taking note. OEMs, restaurateurs, bar owners and operators, and convenience store proprietors are looking for ways to deliver more options to consumers, including offering both CO2 and nitrogen infused beverages - and to do so in the most effective and efficient way possible.



## Did you know?

In the United States alone, around 47.98 billion liters of carbonated drinks are consumed each year - and that's just the non-alcoholic kind.



# Options for Gas Infusion

There are a few ways to technically infuse gas into beverages, each with their own pros and cons.



## Crank & Shake Method

One of the most common ways to infuse gas into beverages includes pressurizing a keg of liquid and shaking it until the gas gets infused through the liquid. While this method may be sufficient for small batches, it's not viable for large scale beverage production.



## Carbonator Method

Another common way to infuse gas into beverages is the tank and pump combination. This method is typically used in fountain beverage dispensing systems to carbonate water in large batches and is commonly known as a carbonator. Systems using a carbonator are known to provide predictable application performance, however they're one of the highest service cost factors in any restaurant or convenience store.

Additionally, the growing demand from consumers for a wider variety of onsite dispensed beverage types have put restaurants and convenience stores in a bind as they try and reduce the space required for both dispense machines and back-room equipment, including the traditional carbonator.



## Inline Method

Inline, on-demand device options are now available that can be used to infuse both nitrogen and CO<sub>2</sub>. These systems are smaller than traditional carbonators, and can reduce the overall size of dispensers to accommodate limited counter space in retail outlets. While the initial upfront cost may be more expensive than traditional methods, inline gas infusion systems are more affordable to maintain over time.



# Evaluating Inline, On-Demand Gas Infusion Systems

When evaluating an inline, on-demand gas infusion system there are several things that should be considered. Remember, not all devices are created equal.

## 1. Size

With the push to reduce space taken by equipment in convenience stores, coffee houses, offices, quick-serve restaurants (QSRs), and restaurants, the size of legacy carbonators can become an issue. Smaller solutions offer the flexibility needed to meet the growing demand from consumers for a wider variety of onsite dispensed beverage types.

## 2. Ease of installation

Based on extensive customer research, we've found that simple solutions work best. Make sure the chosen system is easy to connect for OEMs and it fits well into the overall system so that any user interface, mechanical or electronic control, is intuitive and quick to learn.

## 3. Types of gases

There are multiple options for nitrogen infusion and very few for infusing CO2 for sparkling beverages. Ideally, you find a partner who can provide infusion of both nitrogen and CO2 so that OEMs can easily fit their dispensers into the new system and maintain operational efficiencies.

## 4. Multiple beverages

To ensure that you're able to meet the growing demand for a variety of infused beverages, select a solution that can handle any beverage you want to infuse, including dairy. Infused dairy is a well-received beverage that can only be handled effectively by very few gas infusion providers today.

## 5. Clean in place

Every device will need to be cleaned regardless of the beverage. The reason dairy is so limited in availability is few of the devices are set up to be cleaned effectively in place. OEMs and end users will want to know their partner is providing a solution that can be cleaned simply and effectively.

## 6. Repeatability

Customers count on the quality of the beverage they have selected, time after time. It's important to remove any variability to ensure that the taste, look and feel must remain constant. Look for suppliers with a strong track record of performance that assure beverage consistency.

## 7. Compliance

Simply put - no one wants to worry that a system will be held at customs or fail an onsite inspection because compliance is not in order. Be sure to work with a supplier who understands the complexities of compliance and can deliver solutions that meet local compliance requirements.



### **Did you know?**

Carbon dioxide (CO<sub>2</sub>) and nitrogen (nitro) infusion in drinks create distinct effects and experiences, primarily due to the differences in the gases themselves and their solubility in liquids.

The choice between CO<sub>2</sub> and nitrogen infused drinks depends on the desired mouthfeel, texture, and overall experience.

### **CO<sub>2</sub> infusion**

Carbon dioxide is the most common gas used to carbonate and add fizz to beverages. It dissolves readily in liquids and creates carbonation, resulting in small and lively bubbles.

### **Nitro infusion**

Nitrogen, while not as soluble as CO<sub>2</sub>, is used to create a unique creamy texture and cascading effect in beverages. Nitrogen forms smaller bubbles, contributing to a smoother mouthfeel.



# Product Solution Spotlight



## Xylem Flojet N-Fuser

Engineered with flexibility in mind, the Flojet N-Fuser inline gas infusion system can be used for both CO2 and nitrogen infusion, allowing operators to reach various levels of carbonation or nitro-foam with multiple beverages, including dairy. Due to its 'on demand' capability, the system delivers a consistent performance to support both frequent and intermittent pours. The result? An all-in-one, highly compact system that can be readily configured based on consumer demand.

- System is easy to install, with no onsite adjustment required
- No requirement for an additional valve to set the infusion level
- Easy to operate, clean and maintain
- System is NSF 18 compliant
- Choose from different package configurations based on application requirements

### Top Tip

Pumps can be added to the N-Fuser but are not required for effective inline gas infusion.

*"The Flojet N-Fuser system offers the smallest mounting envelope on the market, with the simplest installation and setup - making it the perfect choice for beverage retailers who are looking to offer more choice while maximizing space and balancing costs. The system also has the unique ability to replicate the same taste with every pour, allowing retailers to meet customer expectations, every time."*

– **Dave Allen**

Director of Product Management & Marketing at Xylem



# Get In Touch

Whether you have a question, want to get a quote or just want to provide feedback, we're here to help and listen. [See our entire beverage portfolio online and send us a message on xylem.com/flojet.](https://www.xylem.com/flojet)

## Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

**For more information on how Xylem can help you, go to [xylem.com/flojet](https://www.xylem.com/flojet)**



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