



Gusmer
Enterprises, Inc.®

Improving efficiency and mastering your spec with
Denwel's carbonation and nitrogenation systems

Denwel Series #2



Agenda

- Gusmer & Denwel Overview
- Inline Carbonation/ Nitrogenation Overview
- General Tips
- System Options
- Q & A – Type questions in the Q/A box





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Service with Knowledge[®] since 1924



Founded in 1918

Management and Ownership currently in 3rd generation

FERMENTATION & FILTRATION PRODUCTS AND SERVICES for FOOD, BEVERAGE & BIOTECH/PHARMACEUTICAL APPLICATIONS

Manufactured and Resale Products

15 Direct Technical Sales Representatives

4 Product Managers & 3 Application Specialists

16 Research & Development Scientists



California

Fresno
Filter Media, Oak, Tablet/Blending & Fiber Manufacturing
Full Service Quality Control Lab
R&D Lab
Warehouse
Customer Service & Sales Support
Application Support

Napa
Analytical Services
Warehouse
Retail Sales
Customer Service & Sales Support
Application Support

Windsor
Gusmer Sonoma Store
Analytical Services
Warehouse
Retail Sales
Customer Service & Sales Support
Application Support

Santa Rosa
Gusmer Fermentation Center

Waupaca, WI

Filter Media and Device Manufacturing
Full Service QC Lab
R&D Lab
Warehouse
Application Support

Mountainside, NJ

Warehouse
Customer Service
Sales Support

Direct Sales Resources Spread Throughout the US.



DENWEL



Overview:

Founded in 1997, DENWEL is a privately owned, independent company with headquarters in Prague and manufacturing facilities in Havlickuv Brod, Czech Republic. The owners and founders are still involved in the day-to-day operations of the company and oversee sales development and technical development/engineering, respectively. Although the core focus of the company remains in the brewing industry, DENWEL has been a respected global supplier to the beverage, pharmaceutical, chemical and energy industries for over two decades.

Although the company's capabilities are vast and include the ability to custom engineer many types of equipment, DENWEL specializes in the following types of standardized, skid mounted equipment:

- Inline gas injection
- Water Deaeration
- Blending and additive dosing equipment
- Flash Pasteurization
- CIP skids and systems

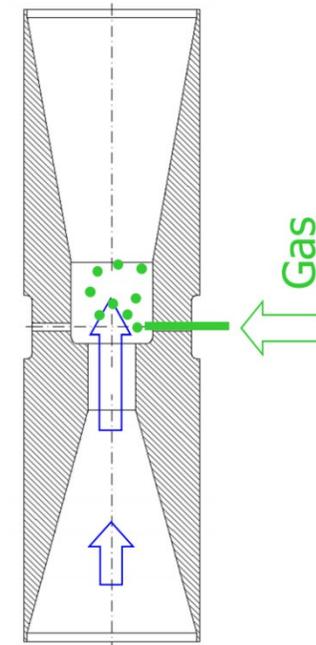




Inline Carbonation / Nitrogenation Overview

How does it work?

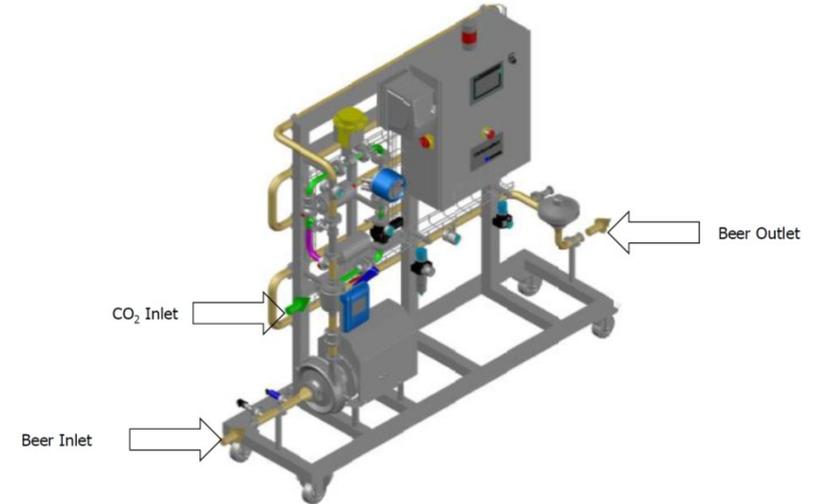
- Gas is injected directly into the beverage using a DENWEL injector, splitting the gas and creating micro bubbles, providing instant saturation without gas or flavor loss.
- Continuous process delivered after filtration / centrifuging. No mixing, recirculation, or candles needed.
- Fully CIP compatible. No parts need to be removed in the process, allowing a fully in-line solution.





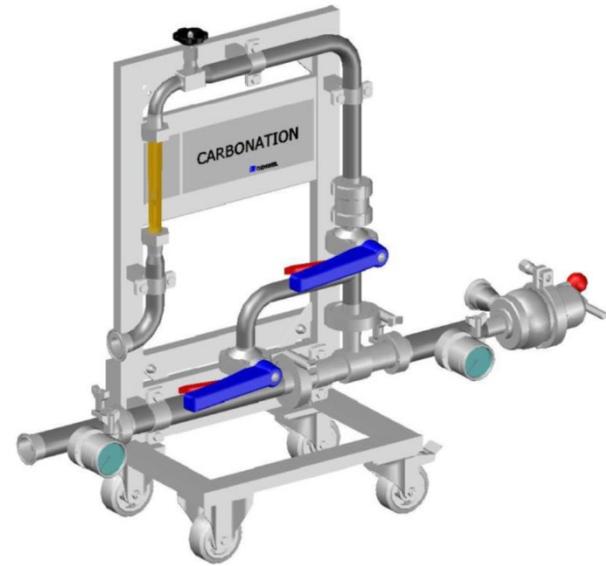
Major Benefits of In-Line Solutions

- Ditching the tank has its perks:
 - Savings in time (an often overlooked resource)
 - Efficiency gains (physical resources of gas)
 - Improved quality of your product
- CIP in place, without any disassembling or missed steps
 - You can't CIP a stone
 - The entire system is meant to be cleaned entirely in-line



Application Tips

- Proper in-line setups should lend to a QC program
 - Helping to develop repeatable and accurate product, every time
 - Create standards that are easily dialed in by your team
- Solutions should be matched to scale with downstream
 - Typically feeds to a buffer tank, but packaging should be part of the conversation
- Multiple solutions for CO², Nitrogenation, High Concentration, or Combo Skids. Review the long term picture.





System Options

- Carbonation: up to 3 v/v (6g/l)*
- Nitrogenation: up to 20 ppm*
- High Concentration Nitrogenation: up to 80 ppm*‡

*pressure and temperature dependent

‡dependent on presence of other gasses





System Options



- Manual: manually controlled valves, helpful chart for setting suggestions
- Semi-Auto: automated/ratio controlled for greater precision-enter parameters and system sets up automatically
- Automatic: automated/analyzer control for greatest level of precision-enter parameters and system sets up automatically, visual feedback shows precision

Manual Carbonation



- DCSXXM-Carbonation
- Addition rates: CO₂-up to 3v/v, 6g/l (P&T dependent)
- DCSXXM range of sizes from 1", 1.5", 2" (DN 25, DN 40, DN 50)
- DCSXXM range can handle flow from 9-85 bbl/h (10-100hl/h)
- Manual control valves for gas and product flow
- Manual systems offer a value oriented way to carbonate beer (or other beverages) in a more efficient and effective way
- Convenient, Mobile Cart Mount from: h=31.5"x w=43.3"x d=6.5"

Manual Nitrogenation

- DNSXXM-Nitrogenation
- Addition rates: N₂-up to 20ppm (P&T dependent)
- DNSXXM range of sizes from 1"-6" (DN 25-DN 150)
- DNSXXM range can handle flow from 9-852 bbl/h (10-1000hl/h)
- Manual control valves for gas and product flow
- Manual systems offer a value oriented way to Nitrogenate beer (or other beverages) in a more efficient and effective way
- Wall Mount or Free Standing from: h=31.5"x w=43.3"x d=6.5"





Semi - Auto

- DCSXXS-Carbonation
- DNSXXS-Nitrogenation
- Addition rates: CO₂ up to 3 v/v (6g/l), Nitrogen-up to 20 ppm (P&T dependent)
- Range of Sizes from 1.5"-6" (DN 40- DN150)
- Range can handle flow from 18-852 bbl/h (20-1000hl/h)
- Ratio controlled via PLC to give a higher degree of precision
- Programmable by brand to allow for individual carbonation/nitrogenation targets
- Free-standing or Wall Mount from*: h=6.2', w=6.5', d=2'

*custom dimensions may also be possible

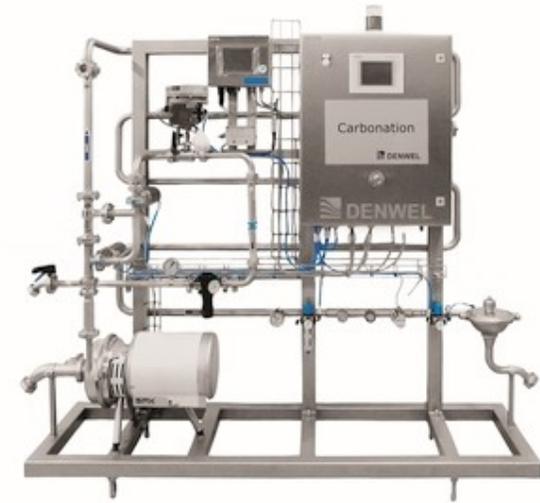




Automatic

- DCSXXXXA-Carbonation
- DNSXXXXA-Nitrogenation
- Addition rates: CO₂ up to 3 v/v (6g/l), Nitrogen-up to 20 ppm (P&T dependent)
- Range of Sizes from 1.5"-6" (DN 40- DN150)
- Range can handle flow from 18-852 bbl/h (20-1000hl/h)
- Analyzer controlled via PLC to give the highest degree of precision
- Programmable by brand to allow for individual carbonation/nitrogenation targets
- Free-standing or Wall Mount from*: h=6.2', w=6.5', d=2'

*custom dimensions may also be possible





High Concentration Nitrogenation

- DNSXXXXH-High Concentration Nitrogenation
- Addition rates: Nitrogen-up to 80 ppm(dependent on P&T and presence of other gasses)
- Optional CO₂ removal: up to 1.5 v/v (3g/l) (P&T dependent)
- Range of Sizes from 1.5"-4" (DN 40- DN100)
- Range can handle flow from 18-426 bbl/h (20-500hl/h)
- Membrane Contactor Based System
- Manual/Pump Driven Batch Process System (for use between BBTs)
- Convenient Mobile Cart Mount from: h=75", w=55", d=28"





Questions?



www.GusmerBeer.com/denwel-webinars

- **Tuesday, July 13th, 1pm EST**
Inline Carbo-Blending & Dosing Systems: Everything You Need For Hard Seltzer Finishing
- **Tuesday, July 27th, 1pm EST**
Water Deaeration: Why You Needed This Yesterday
- **Tuesday, August 10th, 1pm EST**
CIP: Make Your Life Easier



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Thank You!

