DENWEL

Carbonator model DC

- Venturi Nozzle Injector
- Minimal pressure drop
- Efficient dissolution of gas into liquid
- High dosing accuracy
- No static mixer
- Sanitary design
- PLC controlled. automatic CIP mode

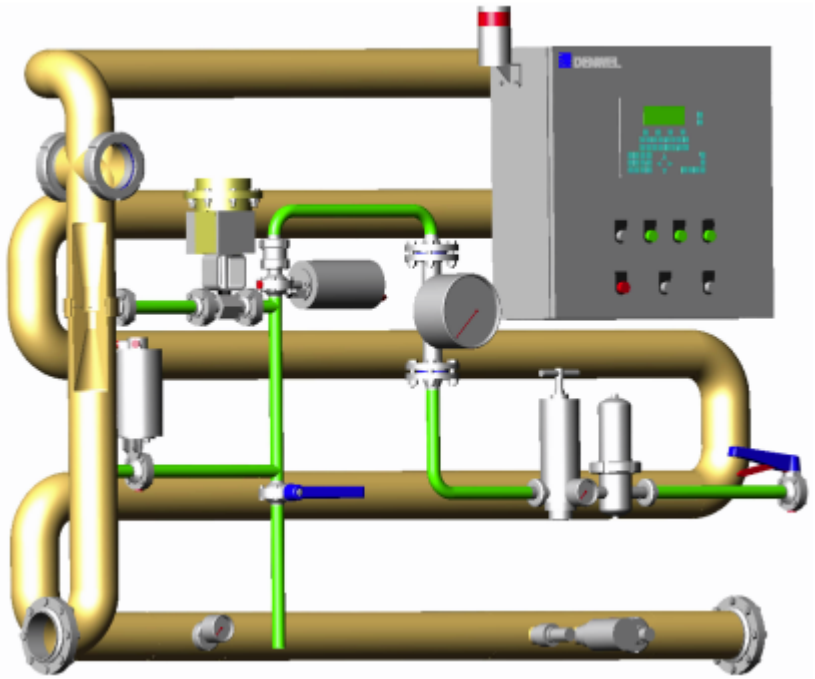
C A R B O N A T I O N

CO2 is an essential ingredient of carbonated beverages. It enhances flavour and body of the product and the effect of effervescence characterizes the refreshing taste of the beverage. The CO2 content also influences beer foam structure and its stability. Therefore consistent and accurate CO2 is one of the main quality factors in the production of beer and soft drinks. Designed for fast and accurate injection and dissolution of CO2, DENWEL provides a fully automated solution for continuous carbonation.

C A R B O N A T I O N

Principle

CO2 is injected into the beverage through the DENWEL Venturi Nozzle. Individually designed for each application, the Venturi Nozzle combines turbulent flow and increased pressure for an optimal mass transfer rate from gas to liquid. No static mixer or sinter candles are needed and most efficient dissolution of CO2 is achieved with only minimal pressure drop, no gas loss and a fully hygienic layout.
An inspection glass allows visual check of bubble-free, complete dissolution of CO2. A selective inline CO2 analyzer continuously monitors the CO2 concentration. The output signal is processed by the PLC to control the CO2 dosing. A high precision control valve accurately adjusts the CO2 injection avoiding any over or under carbonation. The backpressure valve maintains constant pressure in the system despite any changes in flow. Constant system pressure ensures fast and accurate control of CO2 dosing.



Control

The system is PLC controlled and has automatic modes for continuous carbonation and CIP. The PLC displays relevant process data and controls the CO2 content. The measured CO2 value is compared to the set point and the CO2 control valve is adjusted accordingly. Special software algorithm provides fast and precise regulation. Representative screens, control lamps and clear instruction ensure user-friendly operation. Digital and analogue output or optional field-bus interface allow remote control of the system.

CIP

The unit has an uncompromising sanitary design and is fully CIP cleanable. A special bypass ensures complete cleaning of the CO2 injector and control valve simultaneously to the product pipe. The remaining part of the gas supply tube can be sanitized with steam.

Design

The unit comes pre-assembled and tested on a compact frame and can be rapidly put into operation. Proven components guarantee low maintenance and extended lifetime. The modular layout allows easy integration into the plant and efficient combination with other process units like high gravity blending systems. The carbonation unit can be upgraded for simultaneous injection of CO2 and Nitrogen.

Technical specifications

Nominal capacity:	10 to 1000 hl/h
Pipe Diameter:	DN 15 to DN 200
Carbonation range:	1 to 7 g/l
CO2 analyzer accuracy:	± 0,05 g/

Auxiliary utilities

Power supply:	230 VAC, 50-60 Hz
CO2:	6 bar, purity > 99,99%
Air:	6 bar, dried, oil free

DENWEL EU s.r.o. K Hajum 2 CZ 155 00 Prague 5 Czech Republic
Tel. +420 233 082 180 Fax +420 233 082 181 www.denwel.com

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