Blending – Mixing
& Dosing

Taste the Technology
## Process Units

- **HDS**  Yeast Dosing
- **OSS**  Wort Aeration
- **HGB**  High Gravity Blending
- **CPS**  Premix System
- **MSB**  Multi Stream Blender
- **CDS**  Carbonation
- **ADOS**  Additive Dosing
- **NDS**  Nitrogenation
- **CRS**  Decarbonation
- **SBA**  Oxygen Injection
- **CIP**  Cleaning units
CDS Carbonation System

- From DN10 to DN150
- In-Line Measurement Control
- Modular
- Sanitary Design
- Cleaning In Place

Optional Equipment:
- In-Line Measurement Control
- Sterile Filter for CO₂
- Remote access service kit
CDS Carbonation System

- From DN10 to DN150
- In-Line Measurement Control
- Modular
- Sanitary Design
- Cleaning In Place

Optional Equipment:
- In-Line Measurement Control
- Sterile Filter for CO₂
- Remote access service kit
The Modular Concentration Monitor (MCM) controls the system. It measures and continuously monitors the CO₂ concentration with an In-Line CO₂ sensor, adjusting the flow of the required CO₂ amount with a pneumatic control valve. If required, the system can also be supplied with a booster pump, pressure holding valve, and sterilisation filter.
All Vortex venturi nozzles will be designed according the required flow conditions. It is also possible to design the nozzle in order to replace existing Gas-Dosing units.
The most important part of the Centec Carbonation system is the injector nozzle which is customised for each individual system. Its integrated Vortex edge enables CO₂ to be added effectively to the beverage and evenly dissolved in it with only a minimum pressure loss and without static mixers.
If the flow varies more than ± 25% the variable injector type should be used. This variable injector keeps the flow velocity and the pressure drop constant irrespective of the volume flow. It is able to carbonate directly in front of a filler with a flow range from 0 up to full capacity.
<table>
<thead>
<tr>
<th>CDS Classification</th>
<th>CDS 31 A</th>
<th>CDS 22 A</th>
<th>CDS 23 A</th>
<th>CDS 22 DS</th>
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<th>CDS 31 DS</th>
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<th>CDS 11 M</th>
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<td>DN 10 - DN 150</td>
<td>DN 50 - DN 150</td>
<td>DN 50 - DN 150</td>
<td>MCM 33 / MCM 66</td>
<td>MCM 33 / MCM 66</td>
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<td>DN 50 - DN 150</td>
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<td>quick response to product flow variation of 30% to design flow and incoming CO₂ content can change slowly</td>
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<td>yes</td>
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Note: The table provides information on various classifications and parameters related to process control and measurement systems. The specific details include diameter, PLC behavior, process response to flow variations, buffer tank control, and CO₂ measurement along with volume/mass flow ratio.
CO₂ Solubility

Solubility of CO₂ in Water

- 4 °C
- 6 °C
- 8 °C
- 10 °C
- 12 °C
- 14 °C
- 16 °C
- 18 °C
- 20 °C
- 22 °C
- 24 °C
- 26 °C
- 28 °C
- 30 °C
- 32 °C

Pressure (absolute) [bar]

Solubility [g/ltr]
## CO₂ Solubility Table

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<th>16 °C</th>
<th>18 °C</th>
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<td>20.24</td>
<td>19.05</td>
<td>17.93</td>
</tr>
</tbody>
</table>
Waste Water Neutralisation
MSB  Multiple Stream Blender

- From 10 l/h to 150000 l/h
- In-Line Measurement Control
- Variable flow possible
- Modular design
- Sanitary Design
- Cleaning In Place

Optional Equipment:
- Remote access service kit
- Water Deaeration Unit
- Carbonation Unit
The Additive Dosing System is a very flexible system for the continuous and fully automated dosing of one or several components into a main stream. With this In-line dosing system, soft drinks or beer mix drinks etc. can be produced economically optimized. Also, the system can be designed for direct dosing of additives in CiP units etc. Small amounts can be dosed into each other with the same precision as higher volume streams.
ADOS - The basic P&ID
HGB / CDS High-Gravity Blending and Carbonation System

- From DN10 to DN150
- In-Line Measurement Control
- Variable blending ratio
- Modular
- Sanitary Design
- Cleaning In Place

Optional Equipment:
- Water Deaeration
- Cooling System
- Booster Pump
- Remote access service kit
HGB / CDS High-Gravity Blending and Carbonation System
HGB / CDS Flowsheet
Becks / Bremen
Branik / Prague - Water Deaeration
Branik - Water Deaeration & Chiller
Branik - Water Deaeration & UV
Branik – Blending & Carbonation
Branik – Split Range Blending
HDS Yeast Dosing System

- From 0 to 3000 hl/h
- Modular
- Sanitary Design
- Cleaning In Place

Optional Equipment:
- In-Line Measurement Control
- Booster Pump
- Remote access service kit
OSS  Wort Aeration System

- From DN 10 to DN 200
- Oxygen from 0 to 30 ppm
- Sanitary Design
- Cleaning In Place

Optional Equipment:
- In-Line Measurement Control
- Oxygen Steril Filter
- Steam Filter
- Booster Pump
- Remote access service kit
OSS  Wort Aeration System

Controlled by

- Ratio
- In-Line Oxygen measurement
- Ratio & In-Line Oxygen measurement
Zagrebacka Pivovara
CPS Continuous Premix System

- From 2500 l/h to 60000 l/h
- 2 or more Streams possible
- Variable Flow
- In-Line Measurement Control
- Water Deaeration down to 10ppb
- Modular
- Sanitary Design
- Cleaning In Place
Leibinger Brauerei / Ravensburg
Akcine Bendrove Alita / Lithuania
Upgrade Filtration
Upgrade Filtration HGB-CDS
Upgrade Filtration Piping
Upgrade Filtration Platform
Upgrade Filtration CDS-NDS
Upgrade Filtration HGB-CDS-NDS
Upgrade Filtration HGB
Split Range Controller

RatioControllerHGB/Water (SplitRange)

Line 1 and 2

Controller A

Controller B

Controller C

Split Water Control Valve

Beer Monitor

PV: X

Temperature Water

Process: X

PV: X

CV: X

PV: X

CV: X

PV: X

CV: X

 PV: X

The legend of the documentation page 3 is correct and the use of construction of the scheme remains the same.

Controller A

Controller B

Controller C

Split Water Control Valve

Beer Monitor

PV: X

Temperature Water

Process: X

PV: X

CV: X

PV: X

CV: X

PV: X

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CV: X

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The legend of the documentation page 3 is correct and the use of construction of the scheme remains the same.

Controller A

Controller B

Controller C

Split Water Control Valve

Beer Monitor

PV: X

Temperature Water

Process: X

PV: X

CV: X

PV: X

CV: X

PV: X

CV: X

 PV: X

The legend of the documentation page 3 is correct and the use of construction of the scheme remains the same.
Single Range Controller

Ratio Controller Additive / Beer
(Tetra; ISO; T2000 and Caramel)

SP = % Setpoint / 100
V = (Flow HG Beer hl/n + Flow Water hl/n)
Direct Controller

Setpoint from Master PLC

CO₂ Content from Carboteck PT

Controller

SP-W

PV-X

CV-Y

4-20mA

CO₂ Control Valve
## Project Management

### Task: Order Placement

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Working days</th>
<th>Start Date</th>
<th>End Date</th>
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</thead>
<tbody>
<tr>
<td>ORDERPLACEMENT</td>
<td>4 Days</td>
<td>Mon 25.05.03</td>
<td>Fri 28.05.03</td>
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</table>

### Centotec Skills

- Financial & Approval PSD
- Purchasing Components
- Design engineering
- Production control
- Site inspection
- Site inspection at Centotec Workshop
- Site inspection of site infrastructure
- Delivery of Curcic Skids
- Delivery of Curcic Skids to Glasgow

### Mechanical Work on Site - Shut Down Line 1

- Cleaning and preparing new areas (incl. site of TC200)
- General engineering
- Local mechanical engineering
- Mechanical connection of TC200 No. 1
- Mechanical connection of TC200 No. 2
- Piping 2000 to dedicated join of Centotec ADS
- Piping 8000 to dedicated join of Centotec ADS
- Piping work for shut-down line
- Delivery & Ingress 3 MBV shut-down line 1
- Connecting pipe work for shut-down line 1

### Mechanical Work on Site - Water Desalination System - Green Tank

- Delivery of carbon filters
- Ingress of the carbon filters
- Ingress of the carbon filters
- Piping filters to prepared water line
- Delivery of new DL2 cabinet
- Delivery of new DL2 cabinet
- Delivery of new DL2 cabinet
- Delivery of new DL2 cabinet
- Delivery of new DL2 cabinet
Oxygen Dosing System
SBA $O_2$-Injection
SBA Distributor