МИКСЕРЫ И БЛЕНДЕРЫ DICON, DIVA
Технические характеристики

Data Sheet DICON-C™

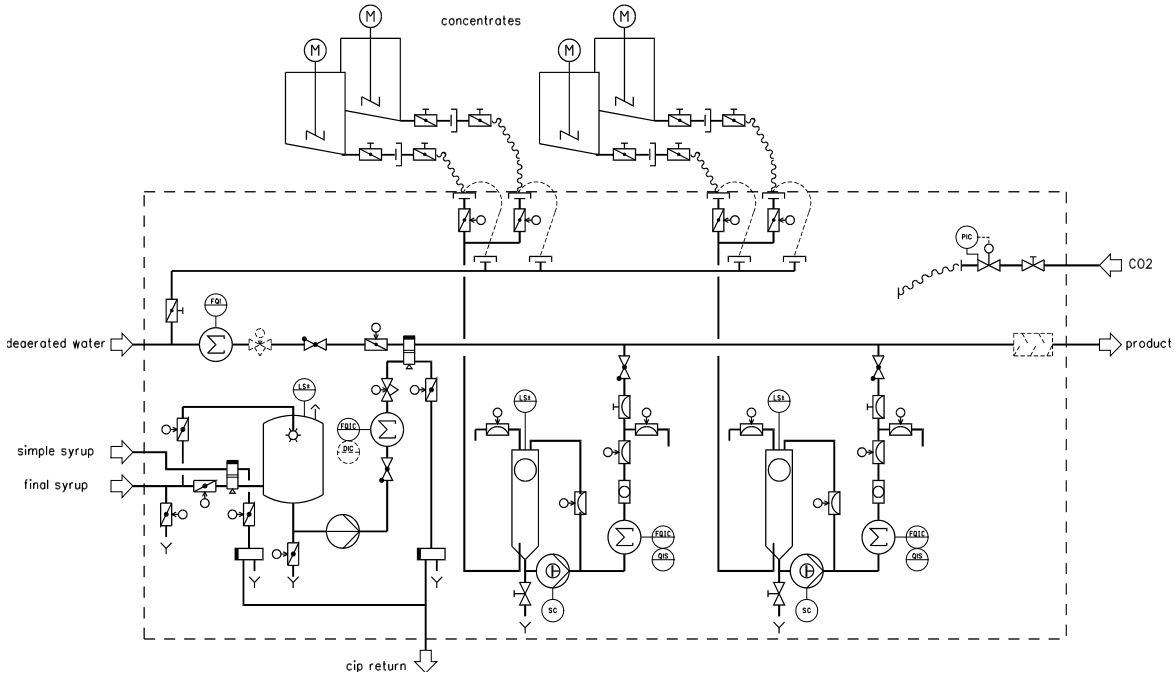
Description

GEA Diessel in-line blending systems type **DICON-C™** are designed for the continuous high-precision mixing of soft drinks. The number of the components to be mixed is not limited. Flow rates from 2 l/h are possible in the concentrate lines.
Liquid flows are measured by accurate flow meters (such as mass flow meters type MDM or electromagnetic flow meters type IZM™) and transmitted to the automatic system controller. The digital controller compares the measured values in consideration of the preselected mixing ratios and actuates the controlling devices in such a way that the preset values are exactly kept. Short-termed control deviations are completely compensated.
Deaerating and test vessels prevent any air occlusions and thus even any potential measuring errors. Apart from that they permit the cyclical monitoring of the flow meters for the concentrates. Modulating valves and/or positive pumps with frequency converter are used as controlling devices.
The in-line blending system is followed by the carbonator type DICAR™, wherein the desired CO_2 content is set. Essential product criteria like Brix value and conductivity are determined and monitored on-line in the DICAR™ carbonator. If desired, an automatic correction (e.g. of Brix deviations) can be carried out within the DICON-C™ system, too.

Features

- Direct mixing of the products in the pipeline, no mixing tanks required.
- Small product quantities only are included in the system, quick availability of the product.
- High accuracy by the use of precise flow meters.
- Cyclical monitoring of the flow meters during the running process.
- The digital controller is not subject to any fault caused by the signal conversion and compensates any short-termed deviations completely.
- Easy handling.
- Compact factory-tested device, ready for connection.
- Can be combined with the carbonator type DICAR.

Scheme: Fully automatic in-line blending system for 5 components (example)



Data Sheet DICON-C™

Technical Data

Blending flow rate	15,000 l/h, 25,000 l/h, 35,000 l/h and 55,000 l/h (an adaptation to the filler capacity is possible), other flow rates on demand
Pressures	*Water inlet:* 2.5 bar +/-0.25 bar *Sugar syrup:* 0.5 bar *Concentrates:* independent supply by gravity (min. outlet height of the container 1 m) *Counterpressure at the outlet:* up to 1.5 bar
Nominal system pressure	6 bar
Dosing accuracy of the components	≤ ±0.25 %
Brix accuracy	≤ ±0.03°Brix at a constant Brix value in sugar syrup or finished syrup or with a built-in accessory unit for the "Brix measurement in sugar syrup/finished syrup"
Dimensions	To a certain extent the dimensions are dependent of the flow rate and the number of components. Example: Dimensions of a 5-components system with a blending flow rate of 35,000 l/h: Width 2,400 mm / height 2,000 mm / depth 1,200 mm
Accessories	- Brix measurement in sugar syrup/finished syrup with an automatic correction of the ratio referred to water - Control of the total flow rate by an additional modulating valve in the water component - Static mixer in the mixing line - Measuring system in the concentrate lines for the recognition of any wrongly connected products - Fixed connection for blowing out the concentrate lines (recommendable in case of frequent concentrate changes) - Automated CIP connection with leakage protection (see the scheme on the 1st page of this data sheet

Data Sheet DICON-S™

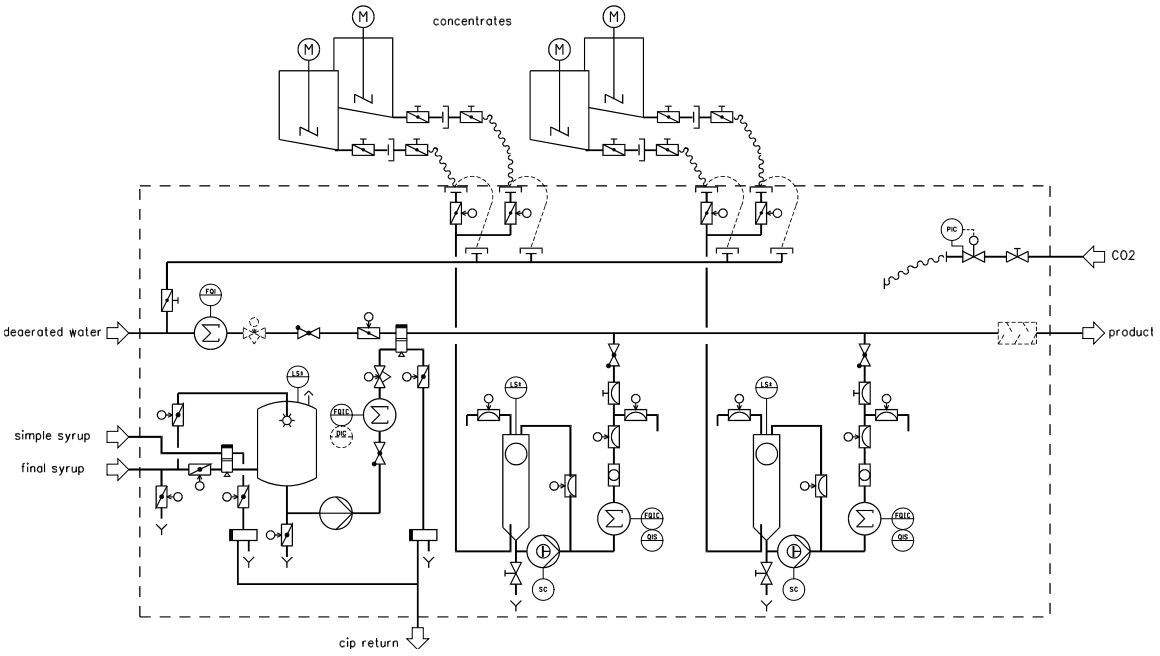
Description

GEA Diessel in-line blending systems type **DICON-S™** are designed for the continuous high-precision mixing of syrup for soft drinks. The number of the components to be mixed is not limited. Flow rates from 2 l/h are possible in the concentrate lines.
Liquid flows are measured by accurate flow meters (such as mass flow meters type MDM or electromagnetic flow meters type IZM™) and transmitted to the automatic system controller. The digital controller compares the measured values in consideration of the preselected mixing ratios and actuates the controlling devices in such a way that the preset values are exactly kept. Short-termed control deviations are completely compensated.
Deaerating and test vessels prevent any air occlusions and thus even any potential measuring errors. Apart from that, they permit the flow meters for concentrates to be cyclically monitored. Modulating valves and/or positive pumps with frequency converter are used as controlling devices. A static mixer in the mixing line ensures a homogeneous product.
The in-line blending system is followed by a small buffer tank. Essential product criteria like Brix value and (if necessary) conductivity are determined and monitored in-line. If desired, an automatic correction (e.g. of Brix deviations) can be carried out within the DICON-S™ system, too.

Features

- Direct mixing of the products in the pipeline, i.e. the system includes small product quantities only
- Quick availability of the product
- No large mixing tanks necessary, small space required only
- High accuracy by the use of precise flow meters
- Cyclical check of the flow meters during the running process
- The digital controller is not subject to any fault caused by the signal conversion and compensates any short-termed deviations completely.
- Easy handling
- Compact factory-tested device, ready for connection

Scheme: Fully automatic in-line blending system for 4 components (example)



Data Sheet DICON-S™

Technical Data

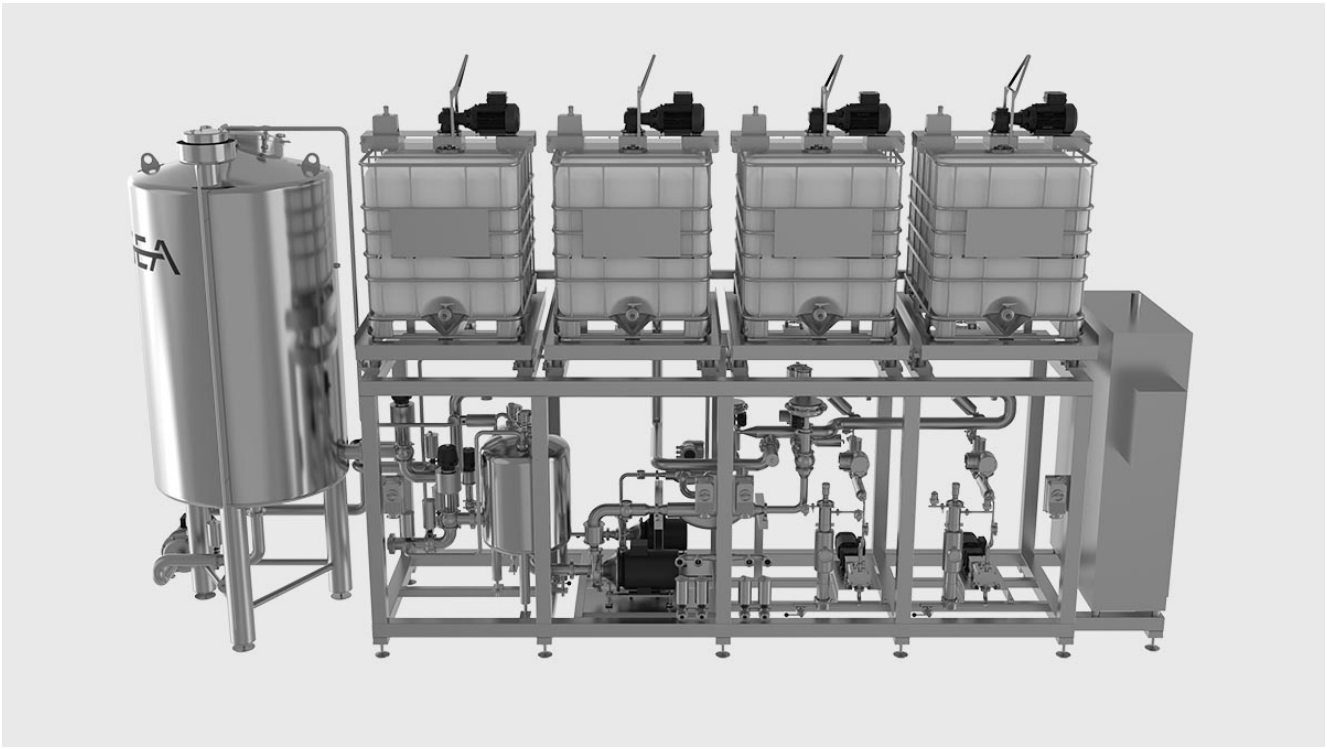
Blending flow rate	12,000 l/h, 20,000 l/h, 30,000 l/h and 40,000 l/h, other flow rates on demand
Pressure	*Water inlet:* 2.5 bar +/-0.25 bar *Sugar syrup:* 0.5 bar *Concentrate:* independent supply by gravity (min. outlet height of the container: 1 m) *Counterpressure:* *at the outlet* up to 1.5 bar
Nominal system pressure	6 bar
Dosing accuracy of the components	≤ ±0.25 %
Brix accuracy	≤ ±0.06°Brix at a constant Brix value in sugar syrup or with a built-in accessory unit for the „Brix measurement in sugar syrup"
Dimensions	To a certain extent the dimensions are dependent of the flow rate and the number of components. Example: Dimensions of a 4-components system with a blending flow rate of 20,000 l/h: width 2,200 mm / height 2,000 mm / depth 1,200 mm
Accessories	- Brix measurement in sugar syrup with an automatic correction of the ratio between water and sugar syrup
	- Control of the total flow rate by an automatic modulating valve in the line for sugar syrup
	- Measuring system in the concentrate lines for the recognition of any wrongly connected products
	- Analysis in finished syrup (e.g. density, Brix, conductivity)
	- Fixed connection for blowing out the concentrate lines (recommendable in case of frequent concentrate changes)
	- Automated CIP connection with leakage protection (see the scheme on page 1 of this data sheet)

GEA DICON® CONTINUOUS IN-LINE BLENDERS FOR DAIRY

GEA DICON® in-line blending equipment for dairy applications is well recognized by the industry as a great go-to technology for blending yogurt and fruit, or for the standardization of milk-based products. Our technology is designed to consistently and accurately blend liquid media in the right ratios, in-line, in the pipe.

The GEA DICON-Y® continuous in-line blending system is our design for yoghurt and fruit mixtures.
The GEA DICON-Y® system features a dynamic mixer to help ensure that ingredients added to the main stream in only small quantities are completely mixed. The dynamic mixer technology also lowers the risk of system blockage from coarse particles. Rotary piston pumps, working at a low flow rate, further help to prevent crushing, and maintain gentle blending of sensitive ingredients. The pumps are frequency controlled, so modulating valves aren’t necessary. And digital regulators keep the ratios of blended ingredients constant, even when throughput fluctuates.

Features of the GEA DICON®-Y system
Gentle product processing
Versatile processing for products of up to 1.000.000 CP
Mixed products homogeneously in the pipeline means no mixing tanks are required
Precise metering devices help to ensure accurate blending
Digital controller completely compensates for deviations
Small product quantities only are included in the system, enabling fast availability
Compact, workshop-tested system



Data Sheet DIVA™

Description

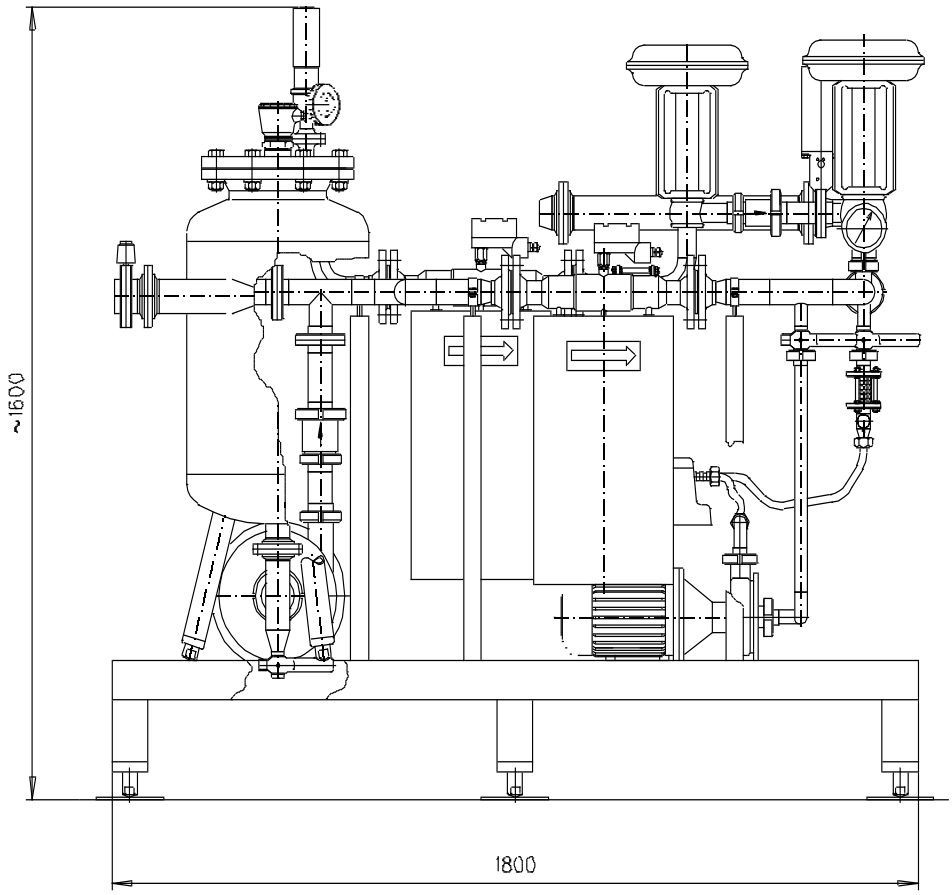
The alcohol reception and blending system **DIVA™** offers the following two basic functions:
- Reception of raw alcohol from tank trucks with quantity measurement, if desired approved by the weights and measures office, i.e. suitable for custody transfer
- Blending with water to reduce the alcoholic strength to ≤76 %vol. with the aim of not being subject to the guidelines for explosion protection in other areas

The reception part is equipped with an air eliminator which separates the air included in the pipeline from the liquid stream.
A pump conveys the alcohol from the air eliminator through a mass flow meter to the mixing point. The alcohol stream is measured by the mass flow meter. The water stream is measured, too, and a control valve adjusts the flow rate to the required mixing ratio.
The alcoholic content in the mixture is checked by a measuring device.

The officially approved density metering system which is arranged in the outlet of the in-line blending system determines the alcoholic content of the alcohol/water mixture. The measured alcoholic strength is returned to the control system, thus enabling a highly accurate setting of the alcohol/water mixture. The deviation range of the set alcohol/water mixture is approx. ±0.05 %vol. of alcohol.

The system is designed to be installed in a hazardous area. Only the control system is intended to be used outside the hazardous area.

Figure (Example)



Data Sheet DIVA™

The ratio of alcohol and water is controlled in such a way that the mixture exactly contains the alcoholic strength desired by the operator.
For that purpose, the control system is informed about the desired set point in the mixture and the strength of the added alcohol (which is either constant i.e. stored in the control system or variable i.e. to be entered by the operator before the start of production).

From the existing part of water in the initial alcohol and the desired part of water in the mixture the control system calculates the quantity of water which has still to be added. Dosing deviations during the start-up and pulse-operation are detected and compensated.

Option 1: Measurement of the alcoholic strength of the fed alcohol by means of the mass flow meter installed in the alcohol pipeline (accuracy: ±0.4 %vol., reproducibility: ±0.2 %vol.). This enables an accurate calculation of the quantity of water still to be added, even if the actual value was not entered correctly.

Option 2: Measurement of the alcoholic strength of the mixed alcohol by means of a flexural resonator in the mixing line (accuracy: ±0.04 %vol., reproducibility: ±0.02 %vol.). On the basis of the measurement a direct control to the desired alcoholic strength takes place.

Technical Data

Reception flow rate	30,000 l/h * max.
Alcohol inlet	By gravity from the tank truck
	Minimum hose diameter 65 mm
Outlet pressure	Approx. 1 bar *
Water pressure	2 bar above the outlet pressure
Alcohol content at the outlet of the system	60 – 76 %vol. *
Materials	Product-contact parts 1.4301 (AISI 304)
	seals

* different values on request

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