

The two basic functions for alcohol reception and blending system **DIVA** are:

- reception of the raw alcohol from tankers with quantity detection, if desired suitable for W & M
- blending with water to reduce the alcohol content to ≤ 76 % Vol. with the aim of not being subject to the ex-regulations in different areas.

The reception part is equipped with an air eliminator. Its task is to separate the air which is also conveyed in the pipeline from the liquid stream.

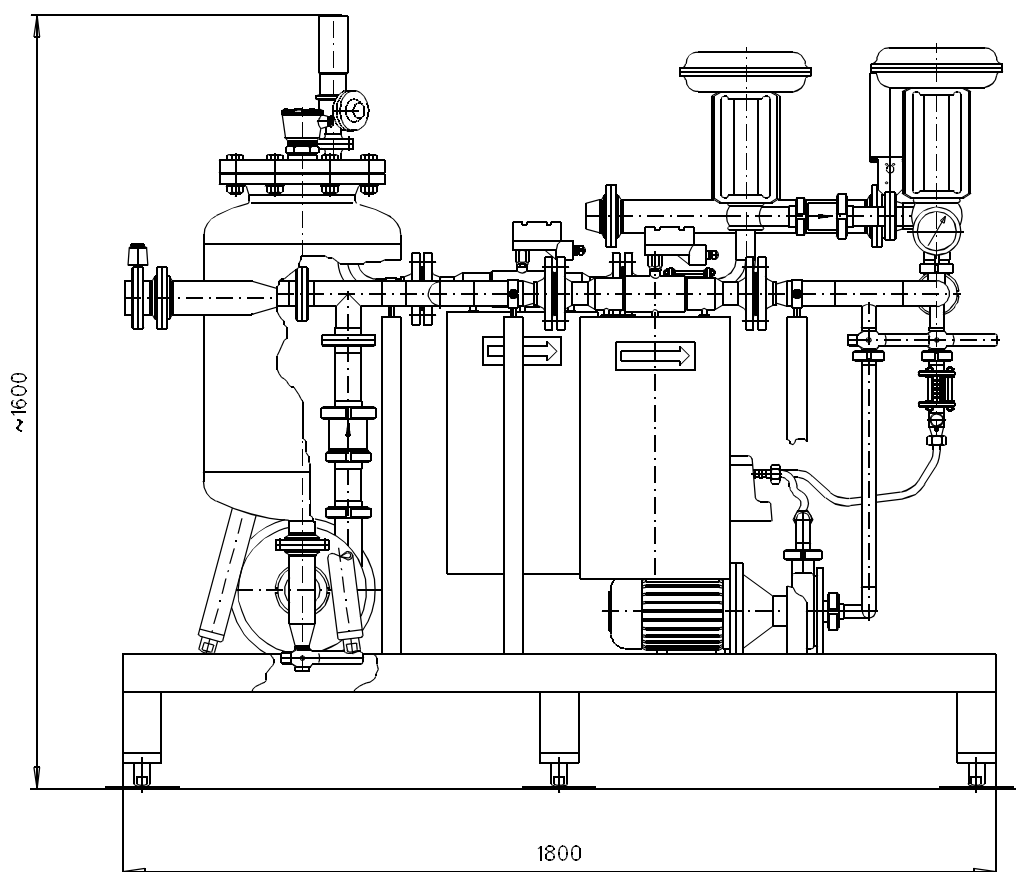
A pump conveys the alcohol from the air eliminator through a mass flow meter to the mixing point. In the mass flow meter the alcohol stream is detected.

The water stream is detected, too, and the flow is set by means of a control valve to the required mixing ratio.

The alcohol content in the mixture is checked in a metering device.

The officially approved density metering system which is mounted in the outlet of the in-line blending system determines the alcohol content of the alcohol/water mixture. The return of the metered alcohol value to the control makes a highly accurate setting of the alcohol/water mixture possible. The deviation range of the set alcohol/water mixture comes to app. $\pm 0,05$ % Vol. alcohol.

The system is designed to be mounted in the ex-area. Just the control is intended to be installed not within the ex-area.



GEA Diessel GmbH
Steven 1
D-31135 Hildesheim
Germany
☎ +49 (0)5121-742-0

**Alcohol Reception and Blending
System
Type **DIVA****

D 46.35 E
Issued: 01.2005
Page 1 of 2

The ratio of alcohol and water is controlled in such a way that the alcohol content the operator desires is obtained in the mixture.

To achieve this the control is informed both about the desired setpoint value in the mixture and about the alcohol content of the fed alcohol (either constant and stored in the control or variable and to be entered by the operator before starting the production).

The control calculates the water mass which is still to be dosed from the existing *mass portion water in the initial alcohol* and the demanded *mass portion water in the mixture*. Dosing deviations during the start are 'pulse-accurately' detected and compensated.

Option 1: Measurement of the alcohol content of the fed alcohol by means of the mass flow meter installed in the alcohol pipeline (accuracy: $\pm 0,4$ Vol.%, reproducibility: $\pm 0,2$ Vol.%). This makes sure that even if the actual value of the alcohol was not entered correctly, the water mass which is to be fed will be calculated correctly.

Option 2: Measurement of the alcohol content of the mixed alcohol by means of a mass flow meter in the mixing line (accuracy: $\pm 0,04$ Vol.%, reproducibility: $\pm 0,02$ Vol.%). On the basis of the measurement a direct control of the desired alcohol content takes place.

Technical Data

Reception capacity	30,000 l/h * max.
Alcohol inlet	free fall from the tanker
	diameter of the hose 65 mm min.
Output pressure	app. 1 bar *
Water pressure	2 bar above output pressure
Alcohol content at the output of the system	60 - 76 % Vol. *
Materials	product-contacting parts 1.4301 (AISI 304)
	seals

* different values on request