DIGI-MIX

The hygienic, virtual nitrogen pump

GRUBER
SCHANK
SYSTEME

CLEAN SYSTEM

DIGI-MIX

THE REPLACEMENT FOR THE MECHANICAL BEER PUMP

A MIXTURE OF CARBON DIOXIDE/NITROGEN ADAPTED TO THE CHANGING POURAGE CONDITIONS IS USED.

Exact CO_2 ratio:
For consistent CO2 content in the beverage.

Exact N_2 ratio:
To compensate for the vertical loss of pressure and all pipe friction losses, no foaming.

BASICS

Constant CO2 pressure ensures consistent quality of the products served.

In order to guarantee a consistent CO2 ratio in the poured beer from full to empty barrel, it is necessary to feed the barrel with the correct CO2 pressure.

The correct CO2 pressure is the so-called equilibrium pressure. Then in the gas-filled part of the barrel there is as much CO2 as there is CO2 dissolved in the beer. This ensures that while pouring the entire contents of the barrel, the beer in the barrel neither becomes flat nor is enriched with CO2 (increase in carbonation).

The beverage will then always taste the same until the very end, even if a tapped barrel is emptied a little slower once in a while.

In order to deliver the beer from the stockroom to the beer tap, it often needs to negotiate a rise. For every metre of rise, a pressure increase of 0.1 bar is required.

If the beer is drawn quickly, the velocity of the beer in the beer pipe increases accordingly. The pipe friction loss rises with the square of the speed of the beer in the pipe.

The longer the pipe, the higher the pressure loss. This pressure loss rises linear to the pipe length.

These pressure losses, resulting from the height and from the pipe friction through the speed and the pipe length must be compensated for. Otherwise the equilibrium pressure of the dissolved CO2 will be too low and dischargement will occur in the pipe, CO2 bubbles form, this foam in the hose leads to major problems when pouring the beer into the glass.

ADVANTAGES

Hygienically clean

- There are, as opposed to the mechanical beer pump, no components installed in the beer pipe, and thus no hygiene problems areas.

Monitoring via mobile phone and PC

- Constant online monitoring of the operating status, error reports and filling levels of the gas bottles on your smart phone and PC.
- Connection facility for the pre-alarm of the gas warning device. In this case, gas generation is switched off and an error report can be sent online.
- Notification of empty gas bottle, the system temporarily switches into “emergency mode” and supplies the pump with the available gas to 100%.

Consistent quality

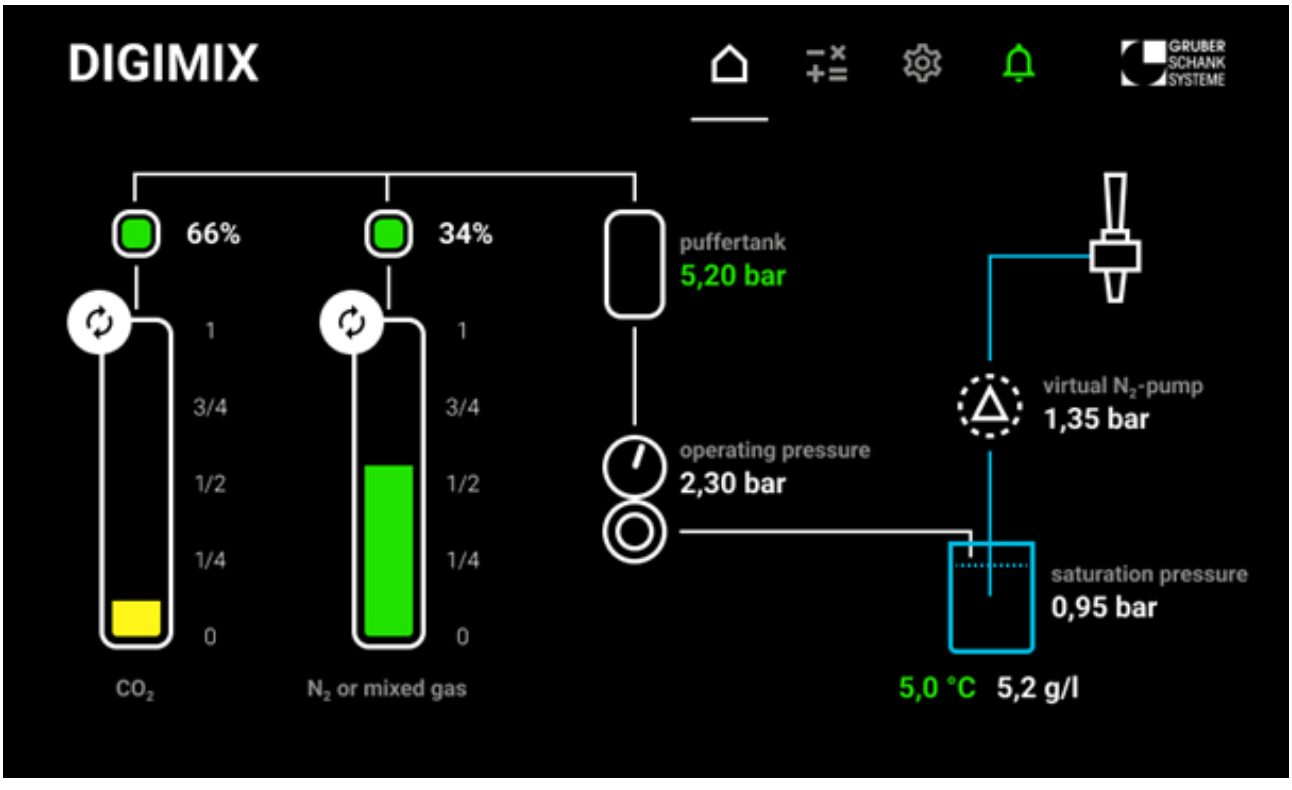
- The CO2 mixed gas ratio is calculated automatically based on the CO2-concentration in the beer and the beverage temperature.
- The N2 ratio is calculated automatically based on the geodesic level and the total pipe friction loss. These losses are compensated for with the precise nitrogen ratio.
- In changing temperatures the CO2 mixed gas ratio is readjusted. Accordingly, the N2 mixed gas ratio also changes automatically.
- Consistent beer quality thanks to always correct CO2 equilibrium pressure until the barrel is empty.

Easy to handle

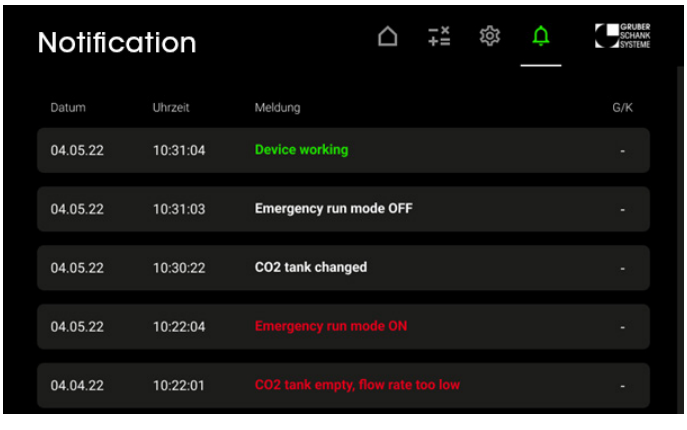
- As carrier gas, 100% nitrogen or mixed gas with 30% CO2 and 70% N2 can be used, in this case only one CO2 warning device is required. This avoids having to monitor the lack of oxygen.
- The current gas bottle content can be calculated via the gas consumption. This will be shown on the display.
- Connection facility for a volumetric flow meter for the beer. This allows an additional automatic mix ratio change (changed pipe friction losses through variable flow speed).
- By entering the operating times you can detect any leakages in the system during downtimes.

USER INTERFACE DIGI-MIX

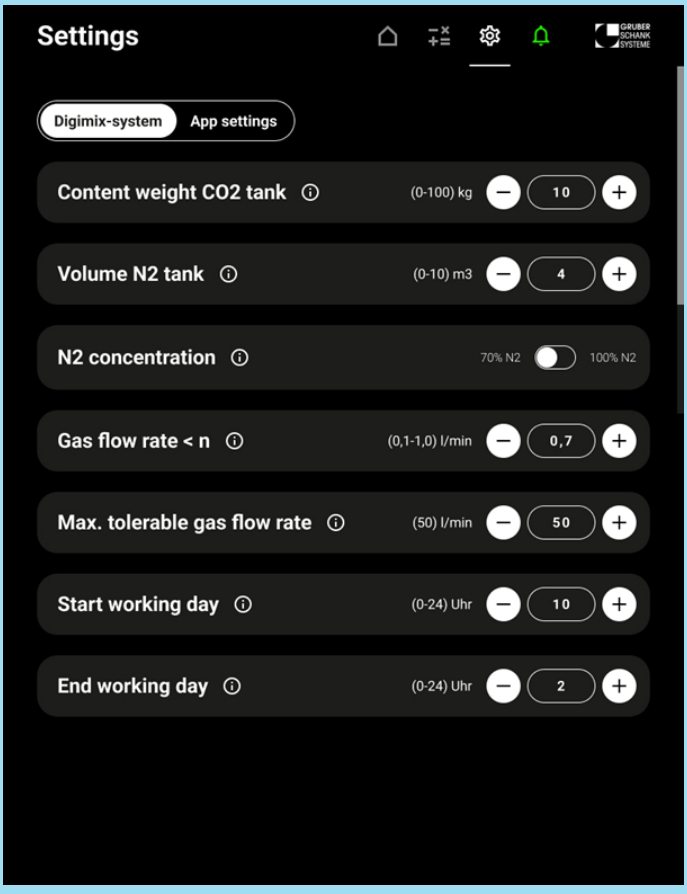
Home



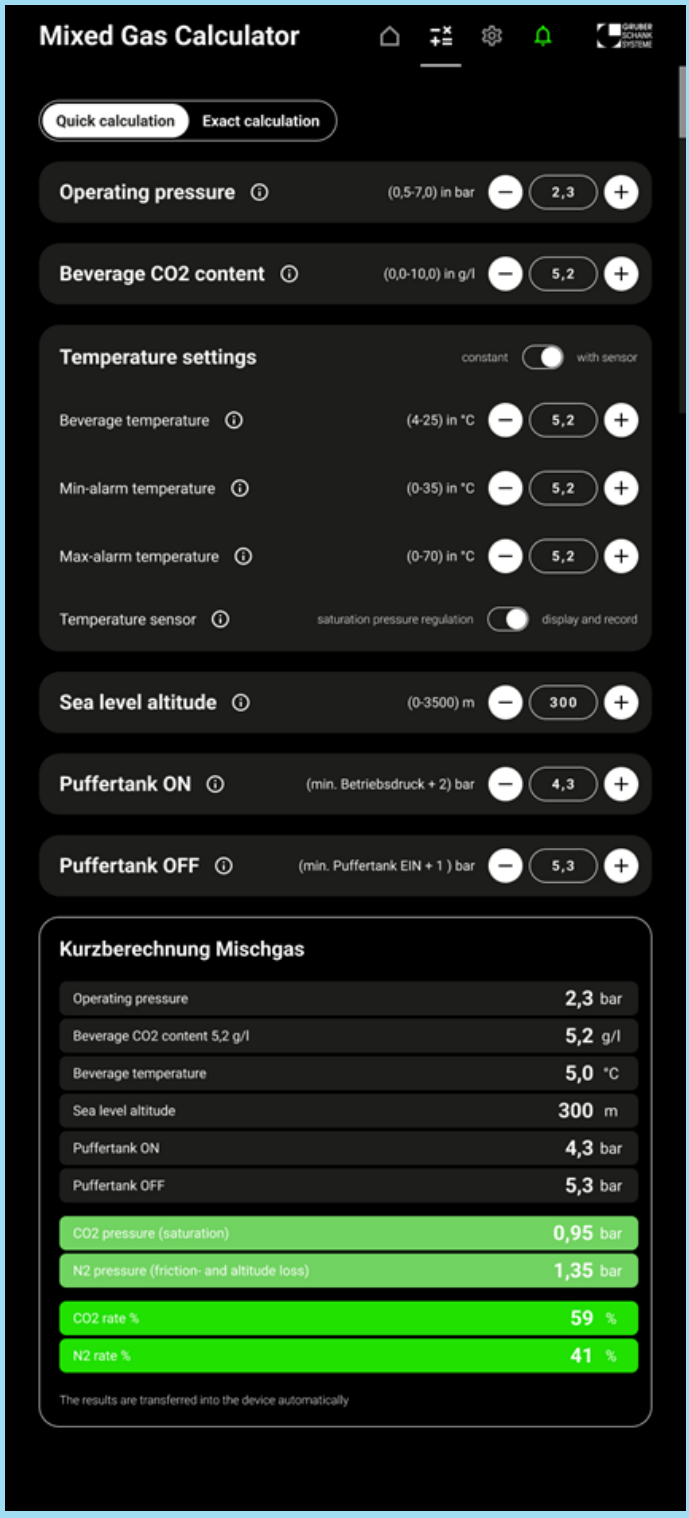
Notifications



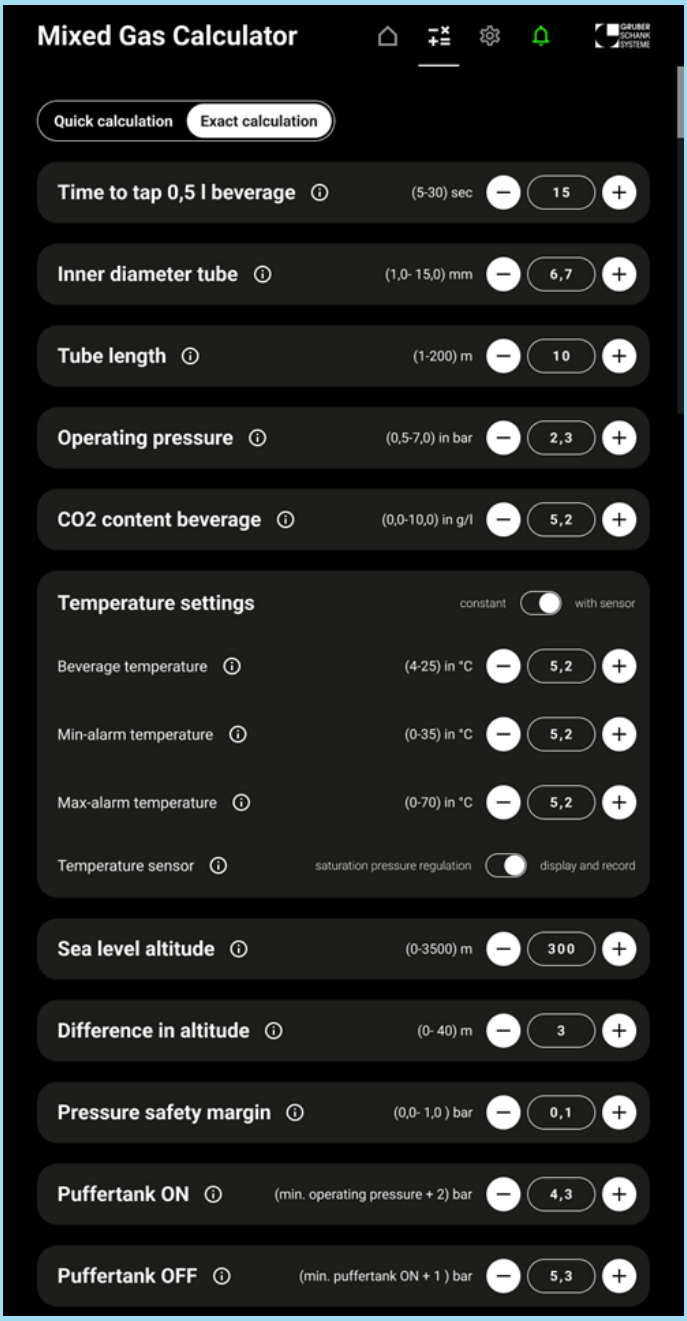
Settings
DIGI-Mix System

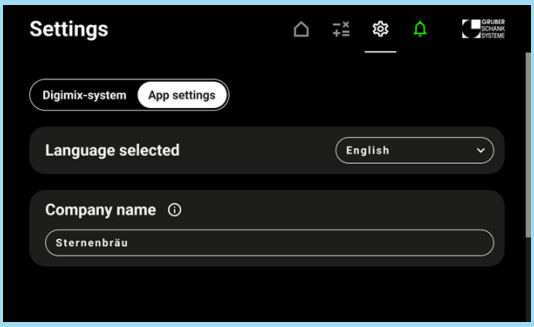


Short calculation



Exact calculation





PHYSICS

There are two ways to compensate for the pressure loss:

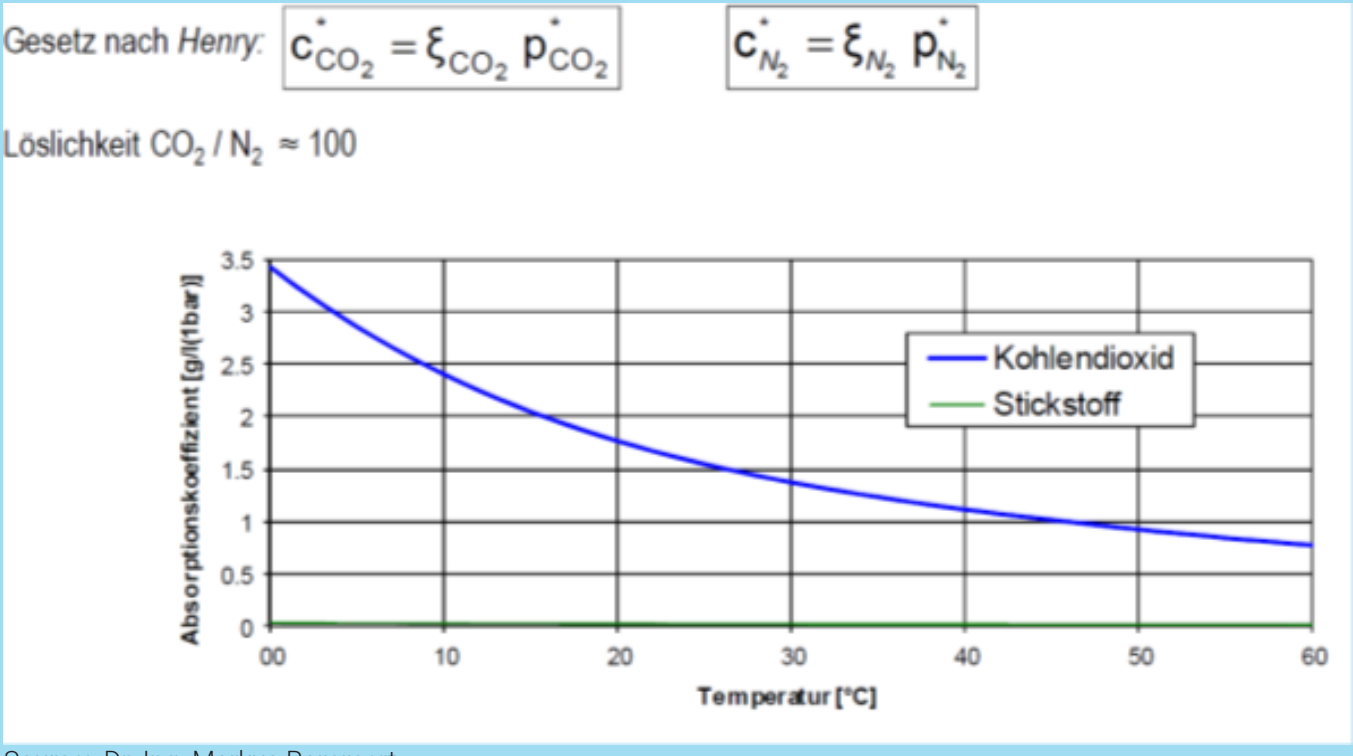
1. The mechanical beer pump

The barrel is preloaded with pure CO2, with the correctly calculated saturation pressure. To compensate for the pressure losses, it is best to use a beer pump that is installed directly after the barrel. The pressure increase of the pump ensures that the overall pressure never falls below the saturation pressure of the beer and the CO2 in the beer is not discharged. The beer pump can only be cleaned chemically, mechanical-chemical cleaning with a foam ball is not possible.
No foam ball can pass through such a pump. In order to ensure optimum beer hygiene, a beer pump should be replaced with a new pump at regular intervals after a few years.

2. GRUBER DIGIMIX GAS PUMP – the hygienic-virtual nitrogen pump

The sum of the pressure losses from the pipe friction and the necessary pressure to negotiate the rise is simply compensated for directly onto the barrel with nitrogen instead of with a mechanical pump. To this end, a gas mix is generated that apart from the required precise CO2 ratio of nitrogen as carrier gas to negotiate the height difference and to compensate for the pressure losses, which result from the pipe friction.

Nitrogen as opposed to CO2-gas dissolves approximately 100 times worse in beer and is sensorially neutral.



Source: Dr.-Ing. Markus Rammert

Dimensions:

H 358 x W 430 x D 120 mm

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