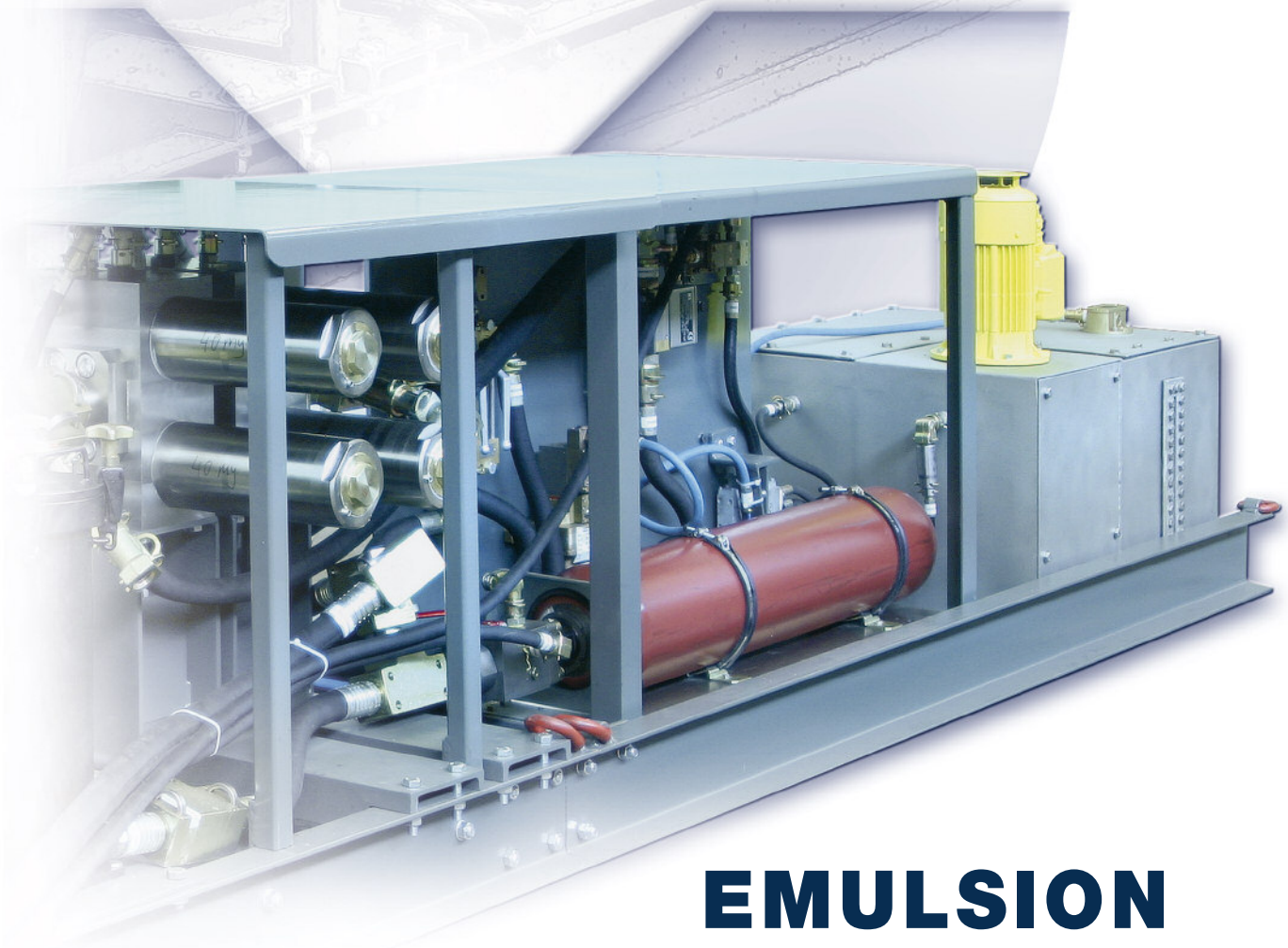
TIEFENBACH
Control Systems GmbH

We give
impulses >>>



EMULSION MIXING PLANT

D

HIGH-PRESSURE FACE SUPPLY SYSTEM | A HIGH-PRESSURE PUMP | B TANK UNIT | C FILTER STATION | D EMULSION MIXING PLANT

EMULSION MIXING PLANT

FUNCTION AND DESIGN

The emulsion mixing plant is an (optional) component of the high-pressure face supply system. It is designed for mixing the fresh water with the concentrate and tops up the emulsion tank automatically.

In order to make refilling the emulsion tank as easy as possible for the operating crew of the high-pressure pump station and to achieve an exact mixing ratio the computer-controlled emulsion mixing plant is used for this task.

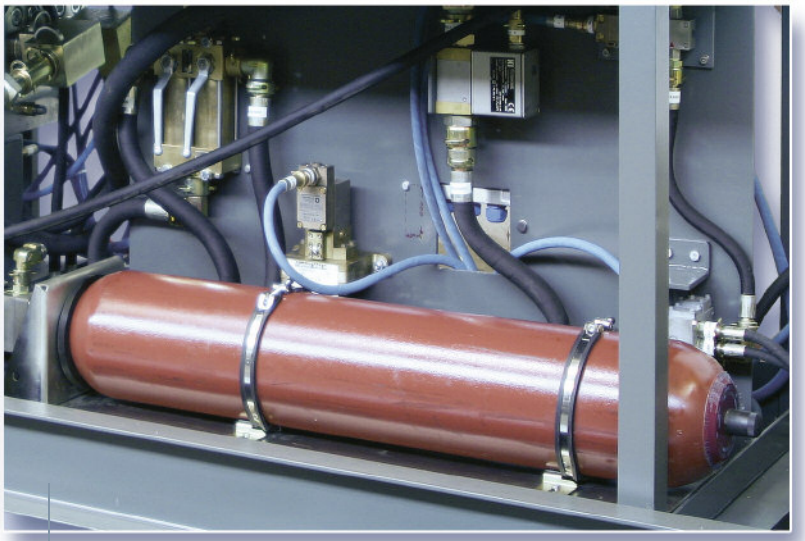
The level and temperature switches of the emulsion tank constantly transmit the filling level to the master control unit of the plant. If the fluid level drops below a predefined level the filling operation will be started. Fresh water and concentrate will be filled at the same time.

The master control unit calculates the emulsion requirement. This is made up of the fresh water and concentrate amounts defined before. The respective amounts are requested according to the freely programmable mixing ratio.

The concentrate is made available in the concentrate tank which is located on the mixing plant frame. A request for concentrate activates the motor and the concentrate is removed from the tank by means of a gear pump and fed to the adding valve. Normally, the adding valve is in circulation position so that damage to the concentrate pump due to pressure is prevented. When the plant is in an inclined position the concentrate cannot flow into the emulsion tank.

The concentrate passes over a flow meter to the emulsion tank. The meter measures the quantity already added and switches the adding valve back to circulation when the target value is achieved. After a short while the motor is turned off. If the concentrate tank should be empty the level switch will provide the respective message. Refilling will not take place and a warning will be issued.

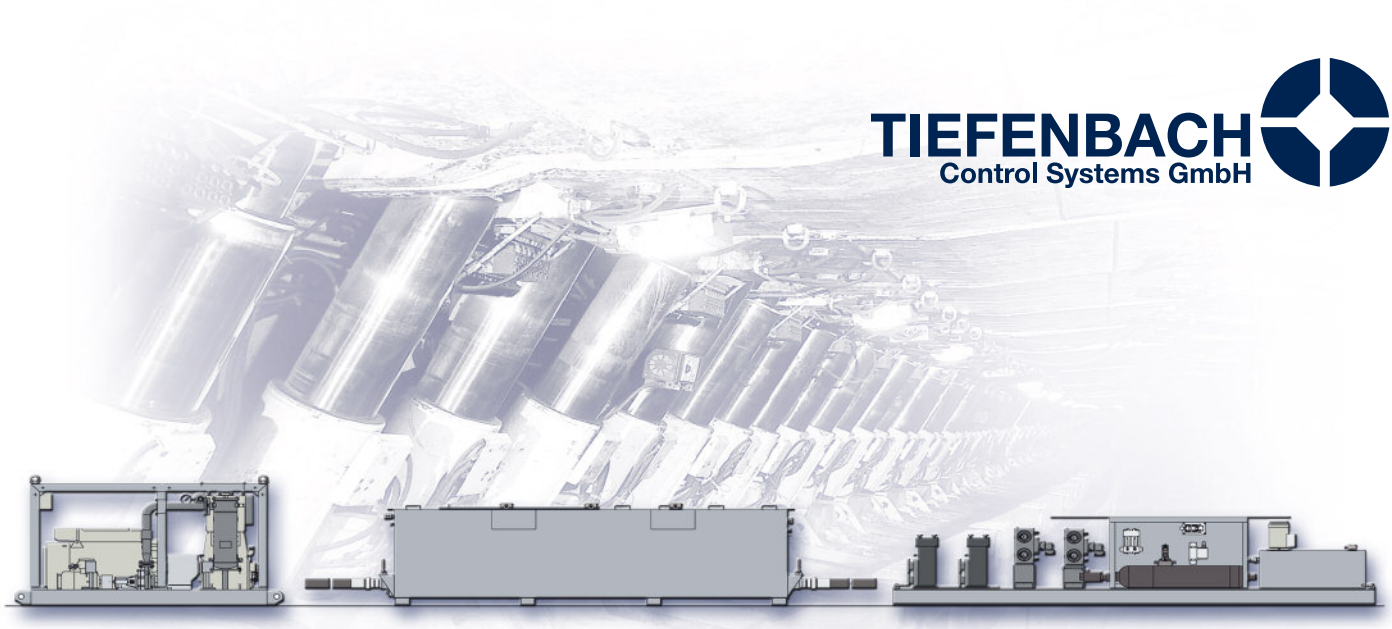
The fresh water is filtered via a backflushable water filter with a mesh size of 40 µm. When fresh water is requested the downstream 2/2-way valve opens permitting flow towards the emulsion tank. A flow meter measures the quantity already supplied. As soon as the target value is reached the 2/2-way valve closes.



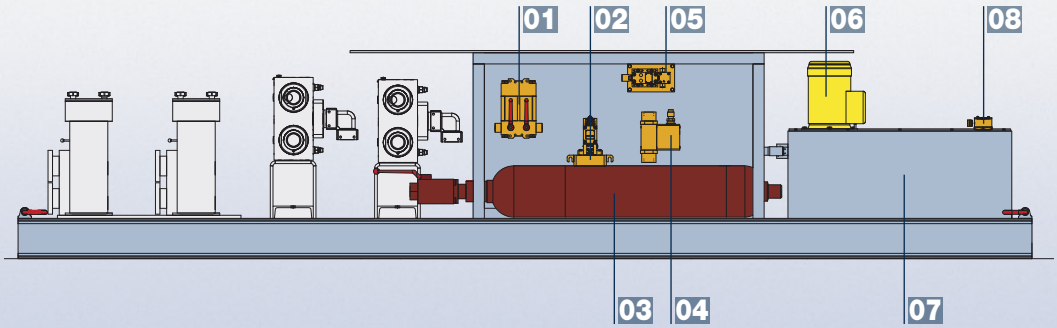
Hydraulic components of the emulsion mixing plant: Fresh water filter, switching valve, flow meter and bladder accumulator

Power supply unit and MCU

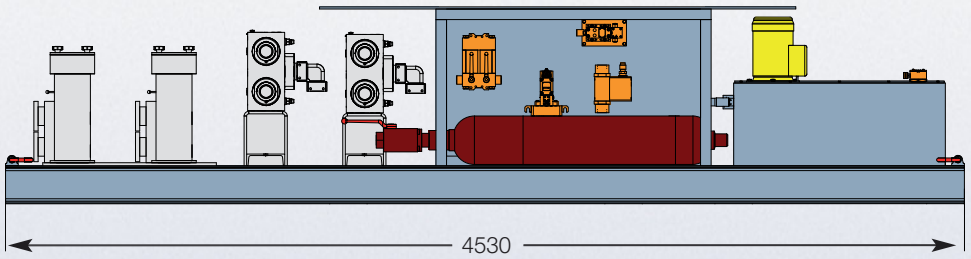
TIEFENBACH
Control Systems GmbH

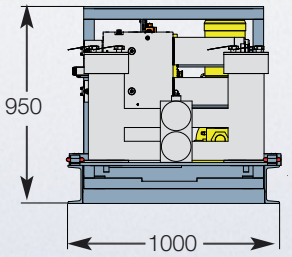


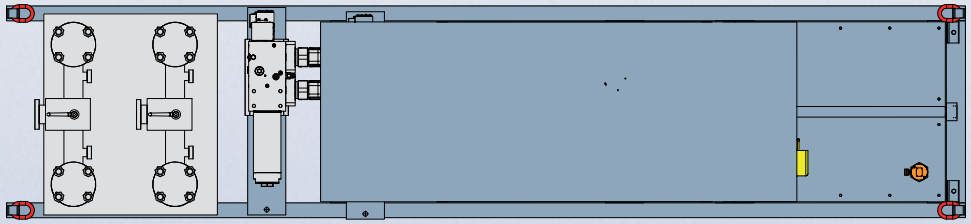
EMULSION MIXING PLANT



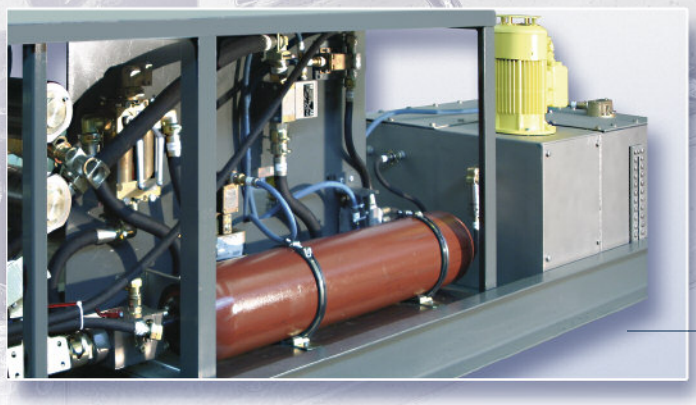
01 Fresh water filter, backflushable
02 2/2-way valve NG25
03 Hydraulic bladder accumulator
04 Flow meter for fresh water
05 Flow meter for concentrate
06 Motor for concentrate pump
07 Concentrate tank
08 Level switch







TIEFENBACH
Control Systems GmbH



Emulsion mixing plant
with concentrate tank

TECHNICAL DATA

EMULSION MIXING PLANT

Concentrate tank	Capacity	400 liters
	Material	high-grade steel
Motor	Power	2.2 kW
	Speed	1400 1/min
	Voltage	1140 V
	Frequency	50 Hz
Water filter	Mesh size	40 µm
	Type	backflushable
	Material	high-grade steel
Flow meter – water	Rated pressure	500 bar
	Measuring range	0-400 l/min
	Electrical connection	SKK24
	Connection	DN31
Flow meter - concentrate	Rated pressure	100 bar
	Measuring range	0.5-14 l/min
	Electrical connection	SKK24
	Connection	G3 pipe thread
2/2-way valve	Nominal size	DN25
	Operating pressure	3 bar – 400 bar
	Flow rate	350 l/min
	Rated voltage	12 VDC
Adding valve	Nominal size	DN10
	Rated pressure	350 bar
	Medium	concentrate
	Medium, pilot control	HFA
	Mesh size, pilot control	25 µm
	Rated voltage	12 VDC

The technical data listed here refer to the standard design.
▸ Further options are available upon request.

Subject to technical alterations

We give impulses >>>

Tiefenbach Control Systems GmbH · Rombacher Hütte 18a · 44795 Bochum
Telephone +49 (0) 234 - 777 66-0 · Fax +49 (0) 234 - 777 66-999
info@tiefenbach-controlsystems.com · www.tiefenbach-controlsystems.com