



# ***AUTOMIXER NITROX-TRIMIX***

Technical data





**NITROX**  
Enriched Air



## The stationary AUTOMIXER mixing system enables the production of ternary (Trimix, Heliair) and binary (Heliox, Nitrox) gas mixtures.

In recent years, as diving activities have changed significantly, the demand for Nitrox and Trimix has risen sharply.

For reasons of user-friendliness, the filling stations cover the demand almost exclusively with "partial pressure" preparations. However, this requires special clean oxygen cylinders and the utmost care when transferring the correct quantities of gas before air is topped up with pure breathing air.

With the partial pressure method, it is also difficult, time-consuming and unfortunately also error-prone to fill half or 3/4 empty cylinders with the desired mixture. Especially if you do not have a large supply of pure gases (oxygen/helium) that are suitable for mixing.

To avoid these problems, the BAVARIA AUTOMIXER has developed a system with static mixers. The system makes it possible to produce the immersion mixture in the required percentages at "low pressure", i.e. before suction by the high-pressure compressor.

Another advantage is that the mixture obtained from the mixer is already homogenized and can therefore be used immediately after an appropriate final analysis, which is not possible with other systems. The only restriction is that the oxygen content must not exceed 40 percent if the compressor is oil-lubricated.





## Components

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li>1 Oxygen pneumatic valve</li> <li>2 Helium pneumatic valve</li> <li>3 Display</li> <li>4 Green LED on the solenoid</li> <li>5 Red LED alarm keypad</li> <li>6</li> </ul> | <ul style="list-style-type: none"> <li>7 Regulation of the oxygen flow</li> <li>8 Regulation of the helium flow</li> <li>10 Oxygen inlet Helium inlet Air inlet Mixture inlet</li> <li>11 outlet</li> <li>12</li> </ul> | <ul style="list-style-type: none"> <li>13 Regulation of the oxygen flow</li> <li>14 Mains switch Power supply plug</li> <li>15 Input of the mixture analyzer at the output of the compressor</li> </ul> |
|---|---|---|

## BAVARIA-AUTOMIXER

is simple and intuitive to use.

- Extreme safety thanks to external 24 V low-voltage solenoid valve power supply for connection to the compressor
- Pneumatic valves that close in the event of an excess gas alarm
- Stainless steel structure, small size and compact easy installation
- Highly efficient internal flow mixers
- Micrometer-controlled flow meter with large stroke for controlled gas flow adjustment
- Analyzing the gas output of the compressor

### HOW THE BAVARIA-AUTOMIXER WORKS

It is easy to install and absolutely user-friendly.

With its sophisticated software, it guarantees mathematically accurate programmable mixtures with minimal pressure loss. The individual elements required for accurate mixing are arranged one behind the other in a stainless steel tube.

Mixing is based on the division and radial deflection of the liquid by each element.

### Included in delivery d:

- AUTOMIXER
- 2 external solenoid valves 24 V
- 230 V / 24 AC power supply
- 230 V - 110 V / 12 V DC Power supply
- Intake filter
- Operating and maintenance manual
- Sticker

### optional mounting kit:

- Hose connection 2 inch/50 for suction hose
- Internal 50 mm spiral hose for suction
- Stainless steel suction hose clamps
- Cable ties for cable harnesses
- Connection of the electrical transformer
- Electric cable
- Auxiliary contact x Holder
- Oxygen pressure reducer + fitting
- Helium pressure regulator + fittings
- Rilsan tube x helium and oxygen D8
- Flow reduction for gas analysis
- Rilsan hose D6 + D4
- Gas re-entry analysis
- Reserve oxygen sensor
- Three-stage suction pipe D25 + D35
- Hose connections

# Using the mixer

## Mixing system

BAVARIA AUTOMIXER enables the production of ternary (Trimix, Heliair) and binary (Heliox, Nitrox) mixtures. It is easy to install and has enormous advantages in terms of practicality.

Application. Its globally patented shape guarantees mathematically predictable mixtures (using special computer software) with minimal pressure drop.

The mixer consists of a series of mixing elements arranged one behind the other in a tubular environment. Mixing is based on the radial division and detour of the liquid through each element. At the inlet port, the system draws in ambient air through a particle filter. The air is fed into the first mixer where oxygen injection takes place.

At the outlet of the first mixer, the nitrox obtained is fed into a second mixer, where helium is injected if required. Finally, the trimix obtained is fed through a special hose to the compressor inlet.

## Regulatory system

Both the helium and oxygen supply circuits are equipped with a special micrometer valve located on the top of the oxygen-helium mixer panel.

Regulator valves must be supplied with gas at a maximum pressure of 10 bar. This pressure can be regulated with pressure regulators from the oxygen and helium cylinder reducing unit.

## Analysis

The mixer is equipped with a connection for checking the output mix.

## Security system

The mixer is equipped with a very efficient safety system. It is equipped with a normally closed microelectronic valve. This microelectronic valve ensures that the levers for opening the gas flow are closed pneumatically if the maximum oxygen content is exceeded.

High O<sub>2</sub>" appears on the display, the red LED flashes and the green LED lights up to indicate that the solenoid has been activated to close the levers.

Press the STOP CLEAR button to stop the alarm and the magnet will be deactivated within three seconds.

To resume working with the system, follow the instructions under RESET OPERATION.

## Solenoid valve unit

The mixer is supplied with a solenoid valve box that must be connected to the compressor. Before they reach the mixer, the oxygen and helium hoses must be fed through this box.

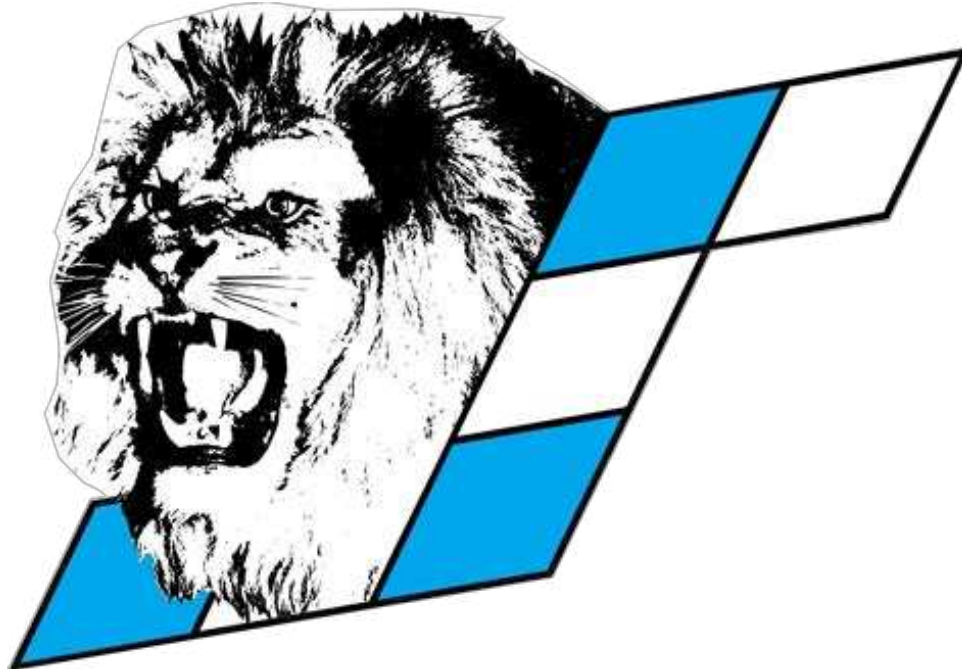
It contains two normally closed solenoid valves which, when connected to the compressor, only open when the compressor is switched on. They prevent gas from accidentally entering the pipe and cut off the gas supply when the compressor stops at the end of the charging process. The gas supply is also cut off in the event of an emergency stop or power failure, which contributes to the safety of the system.

There is a switch in the box that deactivates the operation of the solenoid valves and thus prevents the gas supply as the valves remain closed. Always leave the switch in the off position if you do not need to produce gas mixtures. The processor is also programmed to cut off the oxygen supply if the oxygen level rises above a threshold programmed by the operator (usually 45%) to prevent damage to the compressor due to excessive oxygen levels.



- |                                |  |
|--------------------------------|--|
| 1 ON/OFF switch                | 4 Oxygen inlet (from the pressure reducer)   |
| 2 Oxygen outlet (to the isher) | 5 Helium inlet (from the pressure regulator) |
| 3 Helium outlet (to the mixer) | 6 Signal input (from compressor)             |





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DIN EN ISO 9001



Leading Company  
of Germany

