

Can you rely on your  
breathing air?



**BAUER PureAir.**  
The seal of quality for increased safety  
for scuba diving.



2

# When is bad breathing air dangerous?

**“My breathing air is pure!”** A good thing to know before your next dive. Diving into the shimmering underwater world must not be allowed to endanger one thing in particular: **your health.**

The greatest danger lurks in bad breathing air: Excessive water contained in the breathing air can cause serious material damage, because the diving cylinders start corroding from the inside. Moreover there is the risk that the breathing regulator will ice up during diving. And impurities due to oil residues (aerosols) are also not to be taken lightly. Among the more harmless consequences is headache. Extreme caution is to be observed if there is an oily aftertaste. This indicates residual oil content considerably over the safety limit and is hazardous to health: These oil residues can form a permanent deposit in your lungs, damaging the pulmonary alveoli.



Don't risk anything.  
BAUER PureAir secures  
untroubled diving pleasure.



4

# When can it be life-threatening to you?

Carbon dioxide (CO<sub>2</sub>) is a natural component of our breathing air. However, it also applies here that high concentrations of CO<sub>2</sub> are dangerous. Headaches are normally the first warning sign. If the CO<sub>2</sub> concentration is greatly increased, you risk an accelerated pulse, rise in blood pressure and shortness of breath. The latter is caused by hyperventilating: Breathing is accelerated, panic arises. As a result, there is the danger of unconsciousness, in extreme cases, death.

Of much greater danger is carbon monoxide (CO). CO is a colourless, odourless and tasteless toxic gas. It is generated during an incomplete oxidation of carbonaceous substances. This occurs, for example, during combustion of fuels in the petrol or diesel engine of a compressor as well as in car exhausts.

Inhalation of excessive carbon monoxide causes nausea, tinnitus, unconsciousness and an impairment of the heart function, as oxygen uptake in the blood is blocked. Even small concentrations of carbon monoxide in the breathing air suffice for chronic damage to heart and nerves. Prolonged inhalation of increased doses of CO is lethal.



6

# How is polluted breathing air generated?

**A centre owner with a sense of responsibility and competence knows the causes for the generation of polluted breathing air and is therefore able to exclude the risks.**

Where are the greatest dangers lurking during cylinder filling?

- › Cartridges supplied by other parties and not matched to the purification system and cartridges not being exchanged in due time are unable to absorb either all or some of the pollutants.
- › During the self-filling of cartridges, wrong filter materials are used, or the materials are layered in the wrong order or in wrong proportions. Or, due to improper storage, the drying agent is already in a saturated form before being used.
- › Wrong conditions within the compressor room (e.g. overheating) may result in the breathing air, which is being filled into the cylinders, being polluted due to oversaturation of the filter cartridge.



# How does BAUER PureAir care for pure breathing air?

How can it be guaranteed that perfect breathing air will be filled in your cylinder? With BAUER PureAir a system has been developed which provides reliability worldwide:

**BAUER PureAir, the seal of quality for pure breathing air, exclusively for BAUER breathing air filling centres.**

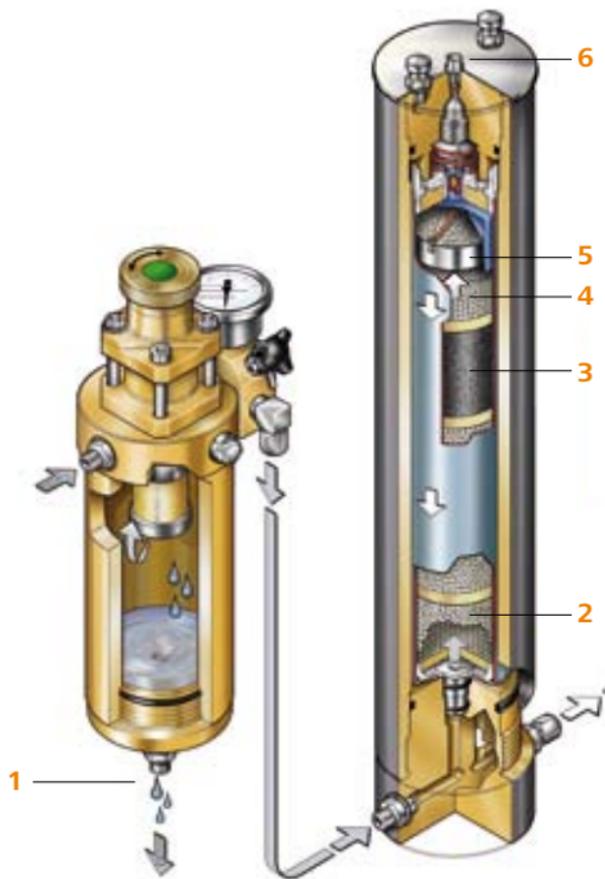
For certification, correct installation and air quality of the unit are checked, and the result is registered in a test log. The water content as well as the oil, carbon dioxide and carbon monoxide concentrations within the breathing air is measured acc. to DIN EN 12021. This European standard defines the purity of the compressed breathing air. Only authorized BAUER partners with successfully completed PureAir training in the BAUER headquarters in Munich are allowed to carry out the certification. Every twelve months at the latest, each PureAir station is reviewed. Any filling centre no longer meeting the requirements will lose the certification. For this reason, BAUER PureAir is the worldwide seal of quality for diving centres using BAUER breathing air compressors.

**Because we have your safety at heart.**

# What does a breathing air purification system have to achieve?

Compressors from BAUER rank among the safest breathing air compressors worldwide. They are equipped with the proven purification systems which often clearly outperform the required safety limits of the standard DIN EN 12021. Original BAUER filter cartridges are filled using only high-quality materials at the optimal mix, vacuum-packed and subsequently checked for leakage.

The standard filter cartridge prevents water or oil from penetrating into the breathing air during air compression. For compressors with petrol or diesel engines, a special cartridge is offered, avoiding a critical carbon monoxide content being aspirated from the exhaust gases.



### Sectional view of a cartridge

- 1 After the final separator has separated water and oil droplets from the air, the air is fed into the cartridge.
- 2 The molecular sieve adsorbs the water vapour from the air.
- 3 The activated carbon binds the residual oil and other organic components.
- 4 Safety buffer of the molecular sieve for the remaining service life of the cartridge after SECURUS message (before automatic shut-down).
- 5 Monitoring sensor of saturation of filter cartridge
- 6 SECURUS interface



12

# Why is automatic filter monitoring so important?

For guaranteeing perfect breathing air it is indispensable that the filter cartridge is exchanged on time and not at discretion. Therefore, each BAUER PureAir station has to be equipped with SECURUS, the proven filter monitoring system from BAUER. It indicates in due time when the cartridge has to be replaced.

In contrast to other systems, SECURUS measures the humidity already within the filter cartridge reliably and cuts off the compressor automatically as soon as the cartridge is saturated.

Only this combination of permanent monitoring and automatic shut-down prevents the cartridge from being replaced too late.

**A positive step towards safe diving!**

## Where can I find BAUER PureAir diving centres?

You are planning a diving holiday and wish to know which diving centres are PureAir certified? Our website [www.bauer-pureair.com](http://www.bauer-pureair.com) provides the information you need with just a few mouse clicks. A world map shows all diving centres currently certified as official BAUER PureAir stations: diving schools, diving centres and filling centres which place value on the highest quality standards of your breathing air.

This map is continuously updated, thus it is always up-to-date. In the input field, by using full-text search, you can search for the individual diving centres. By clicking on the marker flag you receive address information for the corresponding diving centre. Via a link, you can directly access their website or contact them per e-mail.

**In this way, you will find good addresses for safe breathing air worldwide!**

 [www.bauer-pureair.com](http://www.bauer-pureair.com)



### PureAir Bassen weltweit

PureAir Bassen weltweit  
 Die PureAir Zerstäubung  
 Die Gefahren von schlechter Atemluft  
 Sicherheitssysteme von BAUER



Auf der Karte sehen Sie sämtliche Tauchbasen, die momentan als offizielle PureAir Stationen zertifiziert sind.  
 Zum Zoomen der Karte, klicken Sie die Navigationsleiste im linken Bereich an. Um den Karteneinstellung zu ändern, klicken Sie bitte auf die Karte und wählen Sie aus dem in die gewünschte Richtung. Wenn Sie mehr Informationen zu einer Tauchbase erhalten möchten, klicken Sie bitte auf die entsprechende Markierung/Flagge.



Look for this symbol



Handed out by:

---

BAUER KOMPRESSOREN GmbH  
P.O. Box 71 02 60, 81452 München, Germany,  
Phone +49 (0)89/7 80 49-0, Fax +49 (0)89/7 80 49-167,  
info@bauer-kompressoren.de, www.bauer-kompressoren.de