

# B-NITROX SYSTEMS

THE SAFE AND SECURE SOLUTION FOR PRODUCING AND COMPRESSING NITROX



SPORTS & SAFETY



A close-up, shallow depth-of-field photograph of a row of industrial compressors. The compressors are made of silver-colored metal and feature prominent red plastic caps on their top sections. They are connected by a network of stainless steel pipes and fittings. The background is blurred, emphasizing the mechanical details of the units in the foreground.

**QUALITY IS THE BEDROCK OF  
OUR BUSINESS**

**FOR FURTHER INFORMATION**

about our product portfolio and the products shown here, visit our website at [www.bauer-kompressoren](http://www.bauer-kompressoren).

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## COMPANY

### BAUER – PASSIONATE ABOUT THE BEST SOLUTION

BAUER stands for a long tradition of mechanical engineering. As early as 1888, Johann Bauer, a blacksmith in the Bavarian village of Arnstorf, founded an agricultural machinery factory. In 1946, his son Hans Bauer launched a post-war German success story. Bauer started by developing low-pressure compressors, quickly recognising the potential for novel high-pressure compression technology. Accordingly, in the 1960s BAUER KOMPRESSOREN rose to become the global leader in the manufacture of breathing air compressors, especially in the area of scuba diving and fire fighting.

Then as now, the cornerstone of our company's success and the springboard for our global expansion are our passion for developing the best solution, in terms of both technology and costs, and our high quality standards. Today, BAUER KOMPRESSOREN operates a global network of companies and is represented by its subsidiaries in many high-growth markets where German quality is especially appreciated

BAUER KOMPRESSOREN supplies one-stop state-of-the-art solutions tailored to your needs in the Sports & Safety sector – from compression and purification to air, breathing air and nitrox distribution.

Pure breathing air is an essential part of equipment. Compressed and purified in our top-level systems, it protects the lives, health and property of our customers in all situations. All our employees are driven by their passion for providing 100% safety and security for people all over the world – our motivation for performance and success.

We certify pure breathing air to EN12021:2014 standards. In addition, our BAUER PureAir Silver and Gold Certification provides divers in particular with guidance in selecting a trustworthy filling station for pure breathing air.

For more information, visit [bauerpureair.com](http://bauerpureair.com).

Place your trust in BAUER KOMPRESSOREN and the outstanding quality and safety of the global market leader for breathing air systems.

# NITROX – APPLICATIONS AND ADVANTAGES

BAUER Nitrox Systems produce breathing air blends with oxygen content of up to 40% for diving instructors, ambitious recreational divers, professional divers and members of the armed forces on manoeuvres.

The law imposes clear and strict regulations on gas compression processes, which require exceptionally high certified safety levels. Our BAUER Nitrox compressors hold certification from the international technical services corporation TÜV SÜD, upholding our principle that “Safety is non-negotiable”. At BAUER KOMPRESSOREN, our top priority is to provide divers with a safe supply of pure breathing air and nitrox.

An important aspect with respect to product liability in cases of accidents – especially for travel operators and hotels with diving centres on their premises.

## NITROX OFFERS AN ARRAY OF ADVANTAGES FOR DIVERS AND FILLING STATIONS.

### ADVANTAGES FOR DIVERS:

- › Extends divers’ “zero hours”
- › Reduces decompression problems and (nitrogen) narcosis problems
- › Lower nitrogen saturation
  - › Less hazardous when rising and diving frequently
  - › Reduces exhaustion after diving
- › Lowers the necessary post-dive time at surface



### ADVANTAGES FOR FILLING STATIONS:

- › Extended training programme possible for courses using nitrox
- › Competitive edge over filling stations that do not offer nitrox or safe nitrox systems
- › Reduces exhaustion in diving instructors making frequent dives



# PRODUCTS AND SERVICES

## OUTSTANDING COMPRESSOR SOLUTIONS TO MEET ALL YOUR NEEDS

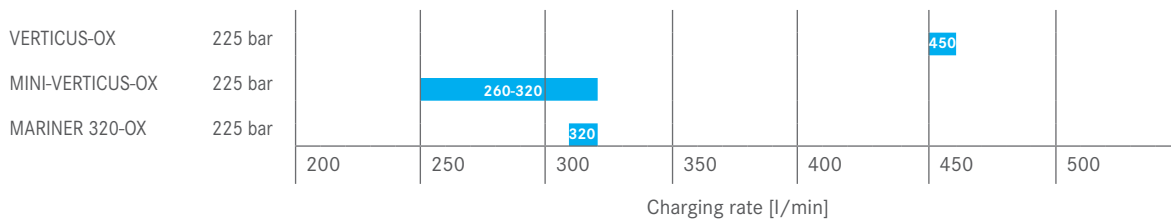
BAUER KOMPRESSOREN filling systems ensure optimum availability and safety in the reliable supply of pure breathing or compressed air for all applications, in strict compliance with international air quality standards such as DIN EN12021:2014 (Breathing Air Standard).

BAUER KOMPRESSOREN produces high-pressure compressors for air, breathing air and nitrox compression, using state-of-the-art technology in outstanding quality. With decades of experience, we have gathered extensive expertise in the fields of development, production and application.

In the Sports & Safety sector, we develop and manufacture mobile compressors and compressors for stationary use, optionally supplied with sound-insulating housing. Select the high-pressure compressor with the right drive system, maximum operating pressure and required output for your needs from our extensive product range.

Our TÜV SÜD-certified Nitrox compressors feature ultra-rugged design and especially high safety. Their sophisticated technology, combined with our decades of experience, ensure high reliability in continuous operation and extremely long service life.

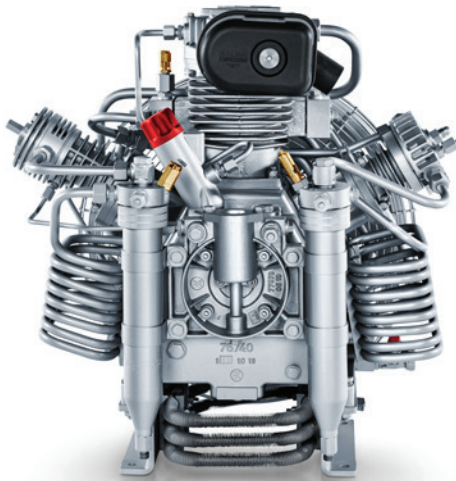
### NITROX COMPRESSORS | 225 BAR



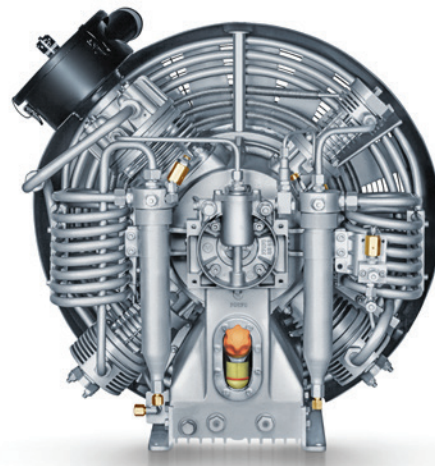
## COMPRESSOR BLOCK

Each and every one of our compressor blocks contains decades of experience and the expertise of our Testing and Development Centre. BAUER compressor blocks have built a legendary reputation on their reliability and long service life. They are the result of advanced design, intelligent in-depth solutions, the use of exceptionally high-quality materials and outstanding production quality.

BAUER nitrox compressors use four-stage compressor blocks exclusively, ensuring lower temperatures and thus enhancing safety and security. An ultrasonic cleaning system reliably removes traces of oil.



IK 12.14 Compressor Block



IK 15.1 Compressor Block

## COMPRESSOR BLOCKS FOR MARINER 320-OX, MINI-VERTICUS-OX AND VERTICUS-OX NITROX COMPRESSORS

- › Temperatures are kept low by the exclusive use of four-stage compressor blocks
- › Assembly: all lubricants are approved for use in high-oxygen environments
- › Outstanding cooling for each individual compressor stage: featuring a sophisticated air-cooling system with large-size coolers and heavily ribbed cylinders
- › Extra-rugged industrial roller bearings are designed for continuous operation under the most challenging conditions.
- › Low operating costs: low-wear final-stage piston rings and long maintenance cycles for valve and piston ring inspection and oil changes keep operating costs down
- › All drive units are dynamically balanced for smooth, quiet and low-vibration operation



# NITROX AND BREATHING AIR PURIFICATION SYSTEMS

As a diver, you rely on pure breathing air. Because your health and your needs are our top priority, BAUER B-NITROX Compressors supply pure breathing air in compliance with DIN EN 12021:2014<sup>1</sup>. BAUER offers decades of experience in air purification, in-depth research and tough material testing, adding up to outstanding quality and maximum safety.

In highly compressed air and gas purification, our aim is to minimise contamination from moisture, CO, CO<sub>2</sub>, oil and particulates. As the market leader, BAUER KOMPRESSOREN supplies air purification systems that have built an excellent reputation worldwide for their cost-effectiveness and quality.

We supply a range of purification systems for many different applications: filter cartridge systems, refrigeration dryers, CO<sub>2</sub> removal systems and an array of monitoring devices for ensuring compliance with specific air quality threshold values.

**BAUER KOMPRESSOREN IS CERTIFIED FOR THE MANUFACTURE OF PRESSURE EQUIPMENT UP TO CATEGORY 4 UNDER THE EU PRESSURE EQUIPMENT DIRECTIVE PED2014/23/EC.**



P 61 Purification System

## P-PURIFICATION SYSTEMS (FILTER CARTRIDGE SYSTEMS)

This range is the undisputed classic among BAUER's purification systems. Its major benefits include rapid and straightforward cartridge change, minimum downtime and cost-effective operation.

BAUER P-Purification Systems reliably remove hazardous substances and deliver pure breathing air for your use. A P-Purification System is supplied as standard with every BAUER breathing air compressor.

Depending on the cartridge type, P-Purification Systems adsorb residual moisture, oil vapour, traces of hydrocarbon gases and carbon monoxide from the compressed air. BAUER P-Purification Systems not only meet, but actually exceed all requirements of the DIN EN 12021:2014 Breathing Air Standard<sup>1</sup>.

<sup>1</sup> Based on due maintenance and installation of the system in accordance with the operating manual and on use of BAUER AERO -GUARD-OX where CO<sub>2</sub> concentrations in intake air exceed the predefined standard values. Local TLVs are ignored.

**DIN EN 12021: 2014-07<sup>1</sup> for NITROX**

Gases	Limit values
Oxygen (O <sub>2</sub> )	Percentage according supplier specification +/- 1 %
Carbon monoxide (CO)	5 ppm
Carbon dioxide (CO <sub>2</sub> )	500 ppm
Oil	0.1 mg/m <sup>3</sup> <sup>2</sup>
H <sub>2</sub> O	25 mg/m <sup>3</sup>

In addition to the P-Purification Systems, we supply the following air purification and monitoring systems:

## PURIFICATION

B-KOOL – Depending on ambient conditions, the B-KOOL Refrigeration Dryer significantly extends filter cartridge life for extremely economical operation.



B-KOOL: Extracts moisture to extend filter cartridge life



B-SECURUS: Uses a “traffic light” system to track remaining filter cartridge life

## MONITORING

- › B-SECURUS – Monitors filter cartridge saturation levels and reliably calculates remaining cartridge life based on cartridge moisture levels
- › B-DETECTION PLUS – Online gas measurement systems for continuous monitoring of compliance with DIN EN 12021:2014 Breathing Air Standard<sup>3</sup>
- › PureAir Silver and PureAir Gold Certification – BAUER’s seal of quality for your pure breathing air

For more information on air and gas purification by BAUER, see our brochure “BAUER Accessories“ and visit [www.bauer-kompressoren.com](http://www.bauer-kompressoren.com)

<sup>1</sup> The chart shows limit values for nitrox as defined in DIN EN 12021:2014.

<sup>2</sup> In breathing air the limit value for oil is 0.5 mg/m<sup>3</sup>.

<sup>3</sup> Optional humidity measurement function available. Total oil measurement (VOC) function is not suitable for nitrox. Total oil measurement for breathing air operation is based on volatile organic compounds (VOCs) only.



B-DETECTION PLUS Online Gas Measurement Systems: The B-DETECTION PLUS performs continuous measurement and continuous monitoring of the threshold limits of O<sub>2</sub>, CO, CO<sub>2</sub> plus optional measurement of absolute humidity and VOCs (total oil value). Available models are: integrated into the compressor (i), standalone (s) and portable model in carry case (m).

## AUTOMATION AND COMPRESSOR CONTROL

For 'automatic' operation, a compressor requires a control unit and an automatic condensate drain system. BAUER Nitrox compressors are supplied as standard with the B-CONTROL II control unit and automatic condensate drain system.

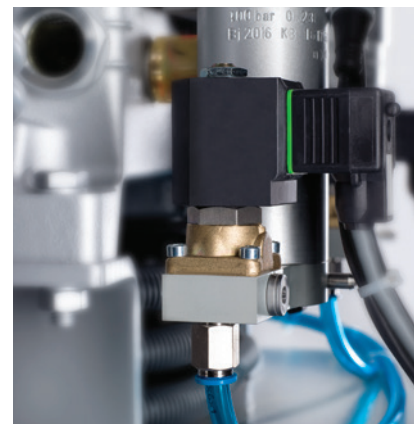
### AUTOMATIC CONDENSATE DRAIN SYSTEM

The technical principle: Condensate (an emulsion of air moisture, lubricant and dirt particles in the ambient air) is produced during the process of compression. Therefore, during operation and after the compressor unit reaches the end of its operating cycle, water is removed from all separators installed in the compressor. This ensures that no traces of aggressive oil and water mixture (condensate) are left behind in the compressor.

The newly developed and patented B-DRAIN automatic condensate-drain uses individually controlled solenoid valves to ensure reliable, automatic condensate removal from the compressor separators and thus permits long filter cartridge service life periods.

The innovative design enables condensate to be drained in a gentle, controlled manner while minimising the pressure drop. This saves energy and helps to increase the efficiency of the compressor unit. At the same time, the new B-DRAIN is much quieter than conventional solutions.

The condensate produced is collected in a condensate tank for disposal in an environmentally-friendly way.



Time saving through automatic operation of the compressor: The new automatic condensate drain B-DRAIN

## COMPRESSOR CONTROL UNITS

Safe, secure monitoring of system functions and a control unit aligned to the system are essential for cost-effective, safe operation of a compressor system.

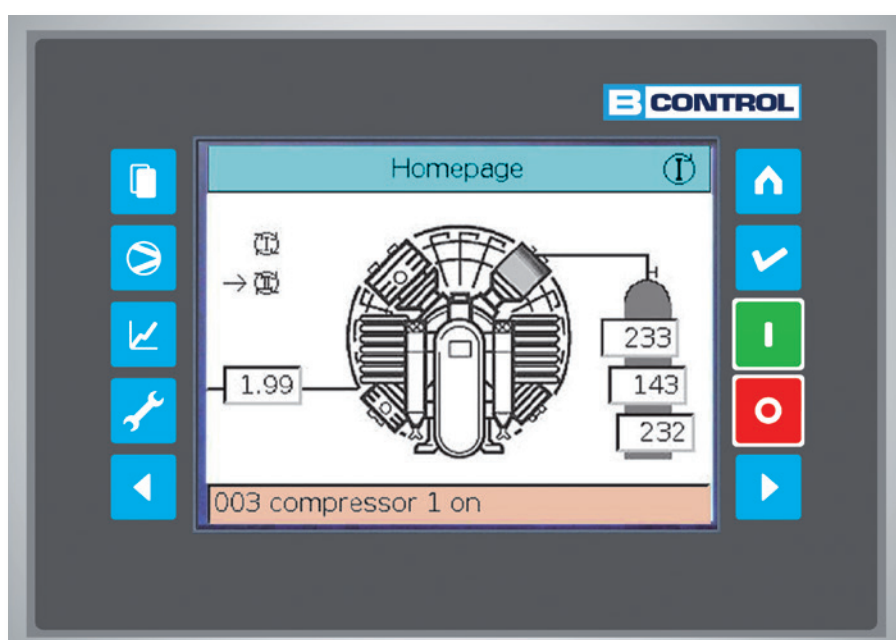
### B-CONTROL II

The B-CONTROL II control unit is supplied with the Nitrox compressors to control and monitor all functions of your BAUER compressor system. The electronic control unit enables all relevant requirements for stationary compressors to be comprehensively met.

In addition to control and monitoring of critical system functions, B-CONTROL II also offers convenient extra features including advanced data logger, USB port, common interfaces such as Modbus, CAN Bus and Profibus, and an integrated control option for an interconnected system of up to four compressors. B-CONTROL II control operations are integrated into BAUER Nitrox compressors, enabling precise oxygen levels to be set and monitors temperatures throughout all compression levels and in the oil and water separator. The control unit automatically shuts down the compressor if the temperature at any of these points exceeds the defined limit value.

The B-CONTROL II can be aligned and expanded to meet customers' individual needs - up to controlling complete system processes.

**BAUER B-CONTROL II IS THE ADVANCED VERSION OF THE B-CONTROL MICRO BASIC COMPRESSOR CONTROL UNIT AND FEATURES A 5.7" TFT COLOUR TOUCH-SCREEN DISPLAY WITH CLEAR TEXT.**



The B-CONTROL II compressor control unit is supplied as standard with the BAUER NITROX compressors



## B-NITROX COMPRESSORS

### BAUER B-NITROX COMPRESSORS

**Open or in soundproof housing, mobile or stationary: the BAUER B-NITROX series offers the ideal model for virtually every application.**

For your safety, all BAUER B-NITROX compressors are equipped with temperature sensors after each compressor stage and in the final separator. These sensors reliably monitor compliance with the preset operating temperature. All components and oils have been designed and tested for use in high-oxygen environments.

In addition, BAUER B-NITROX compressors hold TÜV SÜD certification to provide a high level of operator safety and security.

#### DETAILED INFORMATION

can be found on the BAUER website at [www.bauer-kompressoren.com](http://www.bauer-kompressoren.com)

# MARINER 320 NITROX

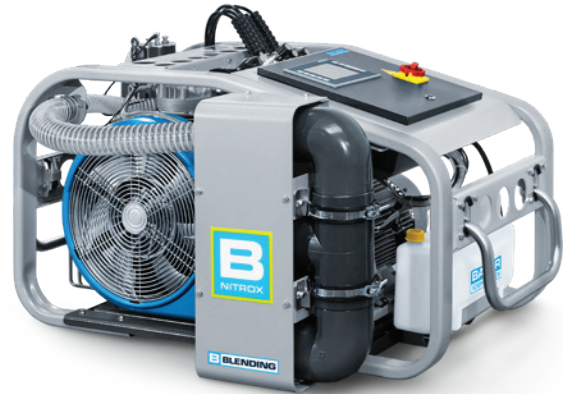
## RUGGED MOBILE SYSTEMS IDEAL FOR USE ON DIVING BOATS

The MARINER series was developed for high charging rates in mobile applications, and is thus ideal for private or commercial operation of filling stations. The MARINER 320-OX model is the ideal partner for safari boat applications.

An integrated crash frame for adding system accessories is supplied as standard. A P 41 Purification System filter cartridge fills up to 530 diving cylinders.<sup>1</sup> Professional quality tailored for all applications: with free air delivery of 320 l/min, the MARINER 320-OX is one of the most powerful mobile compressors in the world!

With ultra-rugged compressor block and corrosion-resistant components, the compressor can cope with the toughest climatic conditions.

- › **320 l/min**
- › **225 bar**
- › **7.5 kW electric motor**



MARINER 320-OX with Blending Panel, electric motor, 4 filling hoses with nitrox connections (standard)

### FEATURES

- › **Durable and rugged: four-stage design and industrial roller bearings ensure a long service life**
- › **Reliable lubrication: with generously sized low-pressure oil pump**
- › **Supplied with B-CONTROL II and automatic condensate drain system as standard**
- › **4 filling hoses with 200 bar M26×2 nitrox filling connections**

### OPTIONAL FEATURES

- › B-SECURUS filter cartridge monitoring unit
- › AERO-GUARD(-OX) CO<sub>2</sub> reduction system

## TECHNICAL SPECIFICATIONS

Type	Charging rate <sup>1</sup>		Operating Press. max		Purific. System	Number of Stages	Speed	Drive and Motor Power		Net Weight approx.	Dimensions L x W x H
	l/min	cfm	bar	psig				Motor	kW		
MARINER 320-E-OX	320	11.5	225	3200	P 41	4	1450	Three-phase 400 V, 50 Hz	7.5	154	130 x 64 x 70

<sup>1</sup> Measured by cylinder filling (10 l) from 0 - 200 bar +/- 5 %.

# MINI-VERTICUS AND VERTICUS NITROX

## EXTRA POWERFUL STATIONARY NITROX COMPRESSOR SYSTEMS

The successful (MINI-)VERTICUS series was developed and constructed to meet strict performance requirements for continuous operation in professional applications. The NITROX models of this series offer charging rates of up to 450 l/min. They combine a small footprint with high output and – in the SUPER SILENT version – with extra-quiet operation.

The compressor blocks are powered by ultra-rugged drive units designed for continuous operation, which maximise cost-effectiveness and durability. The B-CONTROL II demand-driven electronic control unit also provides an array of operating options for VERTICUS series Nitrox compressors, including individual or interconnected operation or as part of a higher-level network.

- › **260 - 450 l/min**
- › **225 bar**
- › **5.5 - 11 kW electric motor**

### FEATURES

- › **Charging rates from 260 l/min to 450 l/min**
- › **Modern and user-friendly B-CONTROL II compressor control unit with colour display**
- › **Long system life: all materials used are high quality and optimised for continuous operation**
- › **Optional Super Silent soundproof housing**

### OPTIONAL FEATURES

- › Super Silent soundproof housing
- › Larger P 61 or P 81 Purification System for longer cartridge life
- › B-SECURUS filter cartridge monitoring unit
- › Four filling hoses with nitrox connectors mounted to the compressor front
- › AERO-GUARD(-OX) CO<sub>2</sub> reduction system
- › B-KOOL refrigeration dryer
- › B-SAFE-OX Safety Filling System
- › **NEW!** Integrated gas measurement system B-DETECTION PLUS i



(MINI-)VERTICUS-OX

## TECHNICAL SPECIFICATIONS

Type	Charging rate <sup>1</sup>		Operating Pressure max.		Purific. system	Number of Stages	Speed	Drive and Motor Power		Net Weight approx. <sup>2</sup>	Dimensions <sup>3</sup> L x W x H
	l/min	cfm	bar	psig				Motor	kW		
<b>MINI-VERTICUS</b>											
MV260-OX	260	9.2	225	3200	P 41	4	1185	400 V/50 Hz <sup>4</sup>	5.5	345	120 x 79 x 138
MV320-OX	320	11.5	225	3200	P 41	4	1450	400 V/50 Hz <sup>4</sup>	7.5	350	120 x 79 x 138
<b>VERTICUS</b>											
V450-OX	450	16	225	3200	P 61	4	1320	400V/50 Hz <sup>5</sup>	11	402	120 x 79 x 153

1 Measured by cylinder filling (10 l) from 0 - 200 bar +/- 5 %.

2 Weight increases by approx. 50 - 65 kg in the Super Silent version.

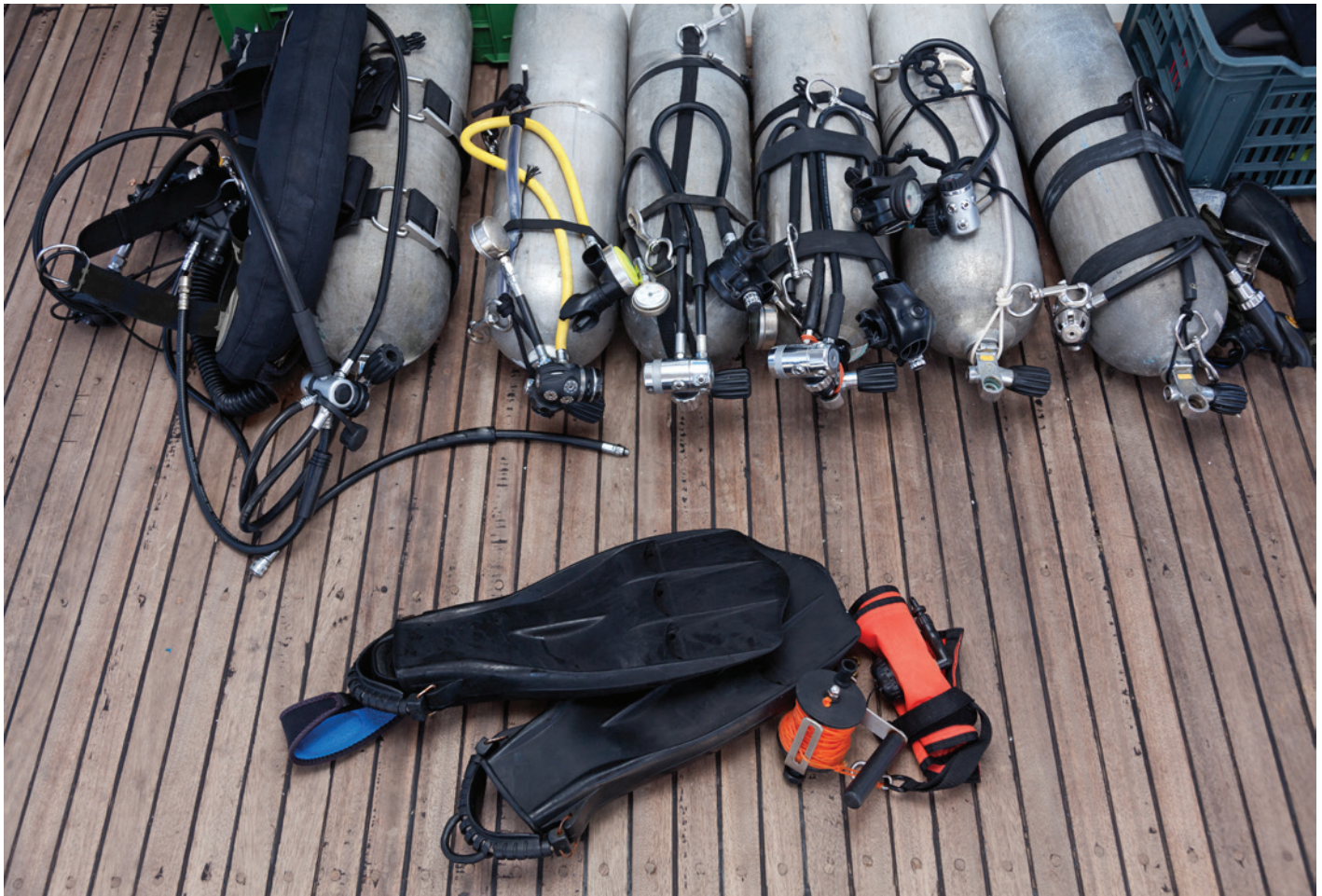
3 Dimensions excluding doors. Dimensions in Super Silent version:

VERTICUS 155 x 81 x 153 cm (Side doors are removable, width without doors: 79 cm)

MINI-VERTICUS 138 x 81 x 138 cm (Side doors are removable, width without doors: 79 cm)

4 Plug dimensions: 16 A.

5 Plug dimensions: 32 A.



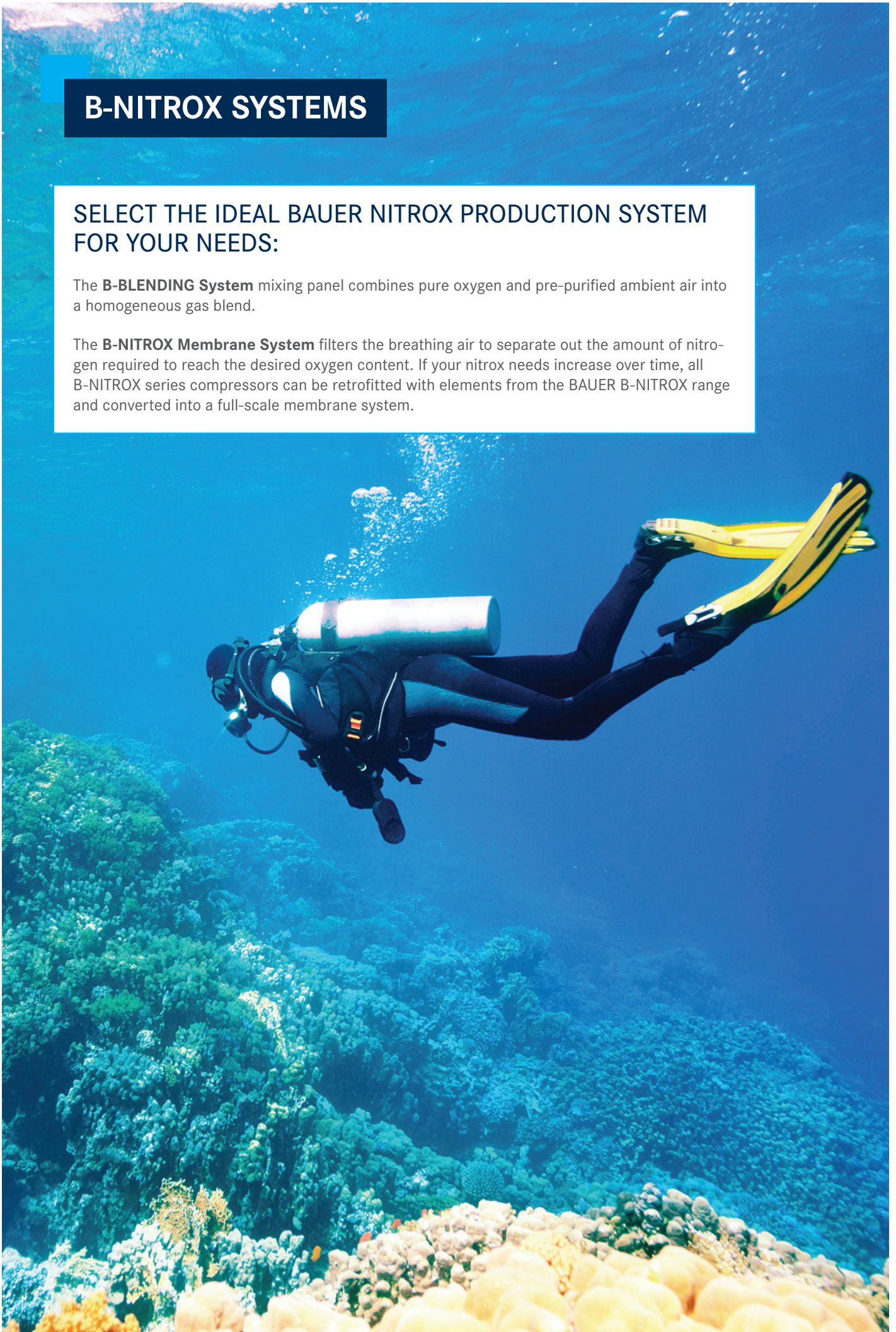


## B-NITROX SYSTEMS

### SELECT THE IDEAL BAUER NITROX PRODUCTION SYSTEM FOR YOUR NEEDS:

The **B-BLENDING System** mixing panel combines pure oxygen and pre-purified ambient air into a homogeneous gas blend.

The **B-NITROX Membrane System** filters the breathing air to separate out the amount of nitrogen required to reach the desired oxygen content. If your nitrox needs increase over time, all B-NITROX series compressors can be retrofitted with elements from the BAUER B-NITROX range and converted into a full-scale membrane system.



# B-BLENDING

## BLENDING NITROX – SAFELY AND SECURELY

BAUER B-BLENDING system combines easy operation with high safety.

Use B-BLENDING with our Nitrox series compressors to produce nitrox blends with up to 40 % O<sub>2</sub> at low cost – even when space is at a premium. B-BLENDING is available as an integrated compressor unit, as it is in the MARINER 320-OX, or wall-mounted external unit, like as standard in connection with (MINI-)VERTICUS series. Keeping you flexible.

The B-BLENDING system is particularly suitable for diving centres with low or medium nitrox needs seeking a simple, yet safe nitrox production system.

Fittable to HP-compressors with charging rate:

› **260 - 450 l/min**

### FEATURES

- › Nitrox blends with up to 40% O<sub>2</sub><sup>1</sup>
- › Use of long-life, maintenance-free and temperature-independent oxygen sensor
- › The B-CONTROL II compressor control unit can easily be switched between nitrox and breathing air production
- › BAUER PureAir Certification available

<sup>1</sup> Variable settings from 21 - 40 % possible.



B-BLENDING

## TECHNICAL SPECIFICATIONS

	Charging rate HP-compressor <sup>1, 2</sup>		OX-Compressor		B-BLENDING Panel	
	l/min	cfm	kg	cm	kg	cm
MV260-OX <sup>4</sup>	260	9.2	345 <sup>3</sup>	120 x 79 x 138	19	16 x 40 x 62
MARINER 320-E-OX	320	11.5	154	130 x 64 x 70	19	16 x 40 x 62
MV320-OX <sup>4</sup>	320	11.5	350 <sup>3</sup>	120 x 79 x 138	19	16 x 40 x 62
V450-OX <sup>4</sup>	450	16	402 <sup>3</sup>	120 x 79 x 153	19	16 x 40 x 62

<sup>1</sup> Measured by cylinder filling from 0 - 200 bar, ± 5 %.

<sup>2</sup> For further data see page 16.

<sup>3</sup> Weight increases by approx. 50 - 65 kg in the Super Silent version.

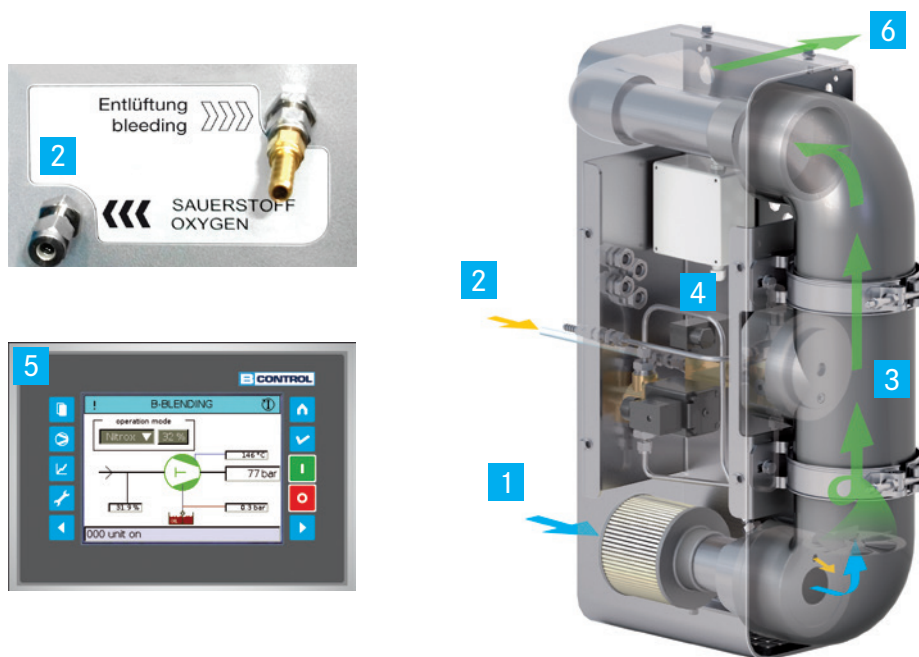
<sup>4</sup> Dimensions in Super Silent version:

VERTICUS 155 x 81 x 153 cm (Side doors are removable, width without doors: 79 cm)

MINI-VERTICUS 138 x 81 x 138 cm (Side doors are removable, width without doors: 79 cm)

## HOW B-BLENDING WORKS

Uncompromising safety was our top priority in the development of B-BLENDING. By combining mechanical and electronic safety systems, we ensure that the oxygen content of the gas blend complies precisely with your settings at all times – independent of external factors. We focused on designing a clear, easy-to-operate user interface to eliminate operating errors.



- 1 Through the air filter, ambient air is drawn in and fed through a particle filter for pre-cleaning before it is directed into the blending duct.
- 2 Pure oxygen in breathing air quality is fed into the blending duct from an external oxygen cylinder. Quantities are precisely controlled by a proportional valve.
- 3 In the blending duct the pre-cleaned ambient air and oxygen are combined in the proportion previously set by the user. The blending duct interior is designed to ensure homogeneous blending.
- 4 A sensor at the mid-point of the blending duct measures the oxygen content of the nitrox blend and sends feedback to the control unit.
- 5 The B-CONTROL II compressor control unit is the control centre of the B-BLENDING system. It monitors the oxygen content of the nitrox blend in real time and regulates the oxygen feed via the proportional valve. The BAUER Nitrox Compressor shuts down immediately if a deviation from the setting is detected.
- 6 The nitrox blend is now compressed to its final pressure by the BAUER Nitrox Compressor.

# B-NITROX MEMBRANE SYSTEM

## LOW-MAINTENANCE METHOD FOR LARGE-VOLUME NITROX PRODUCTION

With TÜV certified high-pressure nitrox compressor and reliable oil removal by the ETC Converter (Purification Module), BAUER's nitrox Membrane System is designed to comply with the strictest standards.

All components are exactly matched for maximum safety. The system is designed for reliable nitrox supply to stationary professional diving centres, safari boats, liveaboards, yachts and cruise ships and for commercial diving missions.

The B-NITROX Membrane System is ideal for professional diving centres that prioritise safety, high free air delivery, low maintenance and low operating costs.

- › **260 – 450 l/min**
- › **Nitrox up to 40 % O<sub>2</sub>**

### FEATURES

- › **TÜV-certified safety of the nitrox compressor ex works**
- › **Cost-effective**
- › **B-CONTROL II compressor control unit makes it easy to set the desired oxygen level**
- › **BAUER PureAir Certification available**



B-NITROX MEMBRANE SYSTEM

## TECHNICAL SPECIFICATIONS

Charging rate HP-Nitrox compressor	LOW PRESSURE MODULE	PURIFICATION MODULE	NITROX MODULE	HIGH PRESSURE MODULE	
l/min	kW	kW	kW	Typ	kW
Oxygen content up to 36 %					
260	7.5	1.2	1.2	MV260-OX	5.5
320	7.5	1.2	1.2	MV320-OX	7.5
450	11	2.5	1.6	V450-OX	11
Oxygen content up to 40 %					
260	11	2.5	1.6	MV260-OX	5.5
320	11	2.5	1.6	MV320-OX	7.5
450	18.5	2.5	2.2	V450-OX	11

1 Measured by cylinder filling from 0 - 200 bar, ± 5 %.

2 For further data see page 14/16.

## HOW THE MEMBRANE SYSTEM WORKS

For nitrox production and filling to be safe and reliable, all system components must be designed to function with each other and be perfectly matched – as BAUER quality systems naturally are.

The membrane system separates out the amount of nitrogen required for the breathing air to reach the desired oxygen content.



### LOW PRESSURE MODULE

**Energy-efficient low-pressure compression module reliably achieves the intake pressure required by the NITROX membrane.**

- › Screw-type module with high-efficiency rolling profile from our in-house production
- › Extra-silent operation at only 62 to 71 dB[A]<sup>1</sup> (depending on unit type) with efficient Super Silent housing
- › Free air delivery and primary pressure of the unit range are perfectly aligned to the free air delivery of the corresponding HIGH-PRESSURE MODULE.

### PURIFICATION MODULE

**Production of oil-free air based on a catalytic process**

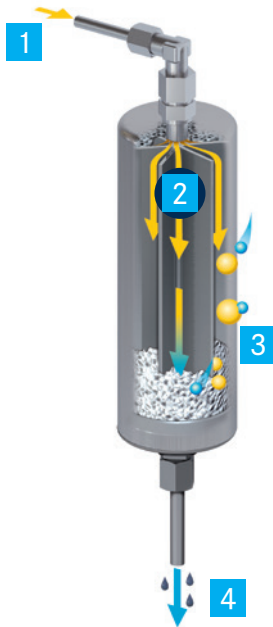
- › The innovative ETC converter separates the oil into pure water and small quantities of CO<sub>2</sub>
- › Oil free in accordance with Class 0 (0.0025 mg/Nm<sup>3</sup>) as per ISO 8573.
- › Economical in continuous operation as regular filter changes are not necessary, unlike conventional activated carbon filters
- › In contrast to conventional activated carbon filters, the residual oil content is independent of the oil content, humidity and temperature of the compressed air

1 +/- 2 dB[A], measured at 1 m distance.



## HOW THE PURIFICATION MODULE WORKS

The PURIFICATION MODULE is based on an ETC converter



- 1 The compressed air is fed from the LOW PRESSURE MODULE to the PURIFICATION MODULE with an oil charge of approx. 3-5 mg/Nm<sup>3</sup>.
- 2 The air, already preheated in the integrated heat exchanger to approx. 190°C, is now further heated to approx. 210° C in the ETC converter using an electric heater and fed through the ETC catalytic filling.
- 3 The oil molecules in the air are separated off in the catalytic filling and oxidised there into CO<sub>2</sub> and water in a similar process to an automotive catalytic converter.
- 4 The catalytically purified air now leaves the converter with a maximum residual oil content of 0.0025 mg/Nm<sup>3</sup> (equivalent to one cube of sugar dissolved in the tanker volume of 10 super tankers). Now optimally purified by the heat exchanger and downstream particle filter, it is fed into the NITROX MODULE.

## NITROX MODULE

The OX MEMBRANE separates N<sub>2</sub> from the breathing air and thus increases the oxygen content.

- › Freely adjustable oxygen content up to 40 %
- › A new type of cooling system uses the nitrogen separated by the membrane to maintain constant process temperature during operation, irrespective of changes in outside temperature. This ensures that the pre-set composition of the nitrox blend is reliably maintained.



## HIGH PRESSURE MODULE

The high-pressure compressor, optimised for compression up to Nitrox EAN 40, delivers reliable and economical operation.

- › Charging rate from 260 to 450 l/min
- › Available as open-unit and Super Silent versions
- › The low thermal stress of the four-stage blocks ensures a high level of safety during nitrox compression and maximises service life.
- › An online temperature monitoring system at all stages and in the oil and water separator automatically shuts down the system if temperatures exceed the pre-set limits, ensuring maximum operating safety.





## ACCESSORIES

BAUER KOMPRESSOREN supplies an extensive range of accessories for its nitrox-optimised high-pressure compressors.

From air purification to control and gas measurement – intelligent BAUER components enable you to tailor your system even more closely to your individual needs.

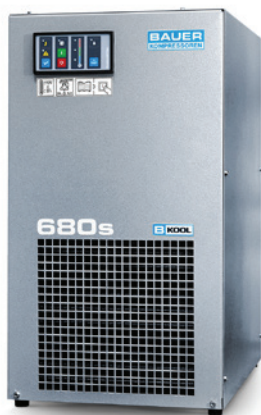
## AIR AND GAS PURIFICATION

### › AERO-GUARD(-OX) CO<sub>2</sub> Adsorber

The AERO-GUARD(-OX) CO<sub>2</sub> Adsorber is highly recommended as an extra for the nitrox membrane system, as through the separation of nitrogen in the membrane significantly increases not only oxygen, but also the CO<sub>2</sub> content. AERO-GUARD(-OX) reduces the CO<sub>2</sub> content of the oxygenated air – a function that is even more vital in nitrox production than in breathing air compression.



AERO-GUARD-OX CO<sub>2</sub> Adsorber



B-KOOL Refrigeration Dryer

### › B-KOOL Refrigeration Dryer

Depending on ambient conditions, The B-KOOL Refrigeration Dryer significantly extends filter cartridge life by drying the air prior to filtration - thus slashing compressor running costs while helping to conserve the environment.

## FILLING AND SAFETY

### › B-SAFE Nitrox Safety Filling System

B-SAFE-OX safety filling module increases the protection of persons and the environment during the filling process. The rugged steel safety module protects the environment and persons from severed filling hose connections and cylinder explosions during filling. The doors are automatically locked during filling.



B-SAFE-OX



## GAS MEASUREMENT TECHNOLOGY

- › AEROTEST – Temporary measurement of breathing air purity
- › B-DETECTION PLUS m – for rapid on-the-spot measurement of O<sub>2</sub>, CO, CO<sub>2</sub> and optional measurement of absolute humidity and total oil value (VOC)<sup>1</sup> in breathing air cylinders or at high-pressure ports.
- › B-DETECTION PLUS i and s – Fixed gas measurement systems for measuring O<sub>2</sub>, CO and CO<sub>2</sub> with optional functions for absolute humidity and total oil value (VOC)<sup>1</sup>. Measuring values can be logged at any time and are saved in Excel format on an SD card for easy access and use.



B-DETECTION PLUS m

For further accessories and more details, see our brochures “BAUER Accessories” and “B-DETECTION PLUS- The next generation online gas measurement systems” and visit [www.bauer-kompressoren.de](http://www.bauer-kompressoren.de).



B-DETECTION PLUS s

<sup>1</sup> Total oil measurement based only on volatile organic compounds (VOCs). Sensor calibration based on isobutene.

A man in a blue shirt is working on a piece of machinery. He is looking intently at the equipment, which has various pipes and components. The background is slightly blurred, showing more of the industrial setting.

## SERVICE IS A KEY COMPONENT OF OUR PHILOSOPHY.

BAUER KOMPRESSOREN is there for you all over the world. With 21 subsidiaries, over 50 regional representatives and a widely distributed service network, we offer our customers speedy contact at all times - as well as a comprehensive range of services from spare-part delivery and service agreements to a broad range of training courses. Our goal is to be in a class of our own - for both our products and our services.

- › Service agreements
- › Modernisation
- › Remote maintenance
- › Spare parts
- › Hire of systems

# ACCEPTANCE AND SERVICES

## MANUFACTURING IS ONLY PART OF WHAT WE DO

### ISO 9001 CERTIFICATION

- › BAUER assures consistent maximum product quality by applying extensive quality control measures during and after production in line with DIN EN ISO 9001.

### ACCEPTANCE TESTING

- › A factory acceptance test (FAT) or site acceptance test (SAT) in the presence of the customer or independent certifying body can be performed in addition to the standard BAUER final test. Many BAUER compressors can also be produced in compliance with other standards, e.g. ASME, KHK etc.

### PACKING AND PRESERVATION

- › Our compressors are packed ex works for transport by truck or air freight. We offer appropriate packing designs tailored for shipping, transport to tropical regions or long storage periods as well as short or long-term preservation.

### INSTALLATION

- › Professional installation is a vital basic factor in safe operation of high-pressure systems. Our global network of branches and qualified partners provides smooth, trouble-free support in planning and implementation, wherever you are.

### PLACING INTO SERVICE

- › When installation is completed, BAUER's specialist staff check the compressor functions to ensure everything works smoothly when the compressor is placed into service. Placing into service naturally includes in-depth instruction for the operators, as a basis to ensure optimum use of the system in the future. This is reflected in lower operating costs and higher value-added.

### TRAINING

- › To ensure your staff are always up-to-date, we provide a comprehensive range of practical training courses for our customers at our in-house BAUER ACADEMY, where users and operators can benefit directly from our expertise.



**INTERESTED IN OUR  
PRODUCTS?**

**CONTACT US – WE ARE HAPPY TO  
PROVIDE INFORMATION AND ASSISTANCE.**

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**B-NITROX SYSTEMS EN**  
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Subject to technical change without notice