

Stationary High Pressure Compressor for Breathing Air and Nitrox Compression

Types:

PE320-VE-OX | PE550-VE-OX | PE700-VE-OX



PE 550-VE-OX in open version

General	
Medium	Air / Nitrox up to 40% O ₂
Intake pressure	Atmospheric
Filling pressure	PN200
Pressure setting, final pressure SIV	225 bar
Pressure setting, pressure sensor	220 bar
Permissible ambient temperature range	+5...+40°C
Permissible altitude	0...1500 m ü. NN
Max. permissible tilt	5°
System type	Open / Super Silent
Standard operating voltage	400 V; 50 Hz
Other operating voltage	On request
Compressor oil, standard	Synthetic
Oil change interval	Synthetic: 1x annually / 1000 h
Finish	RAL 1028 (Front) / RAL 9006 (side panels)

Compressor system	PE320-VE-OX	PE550-VE-OX	PE700-VE-OX
Charging rate ¹	320 l/min	550 l/min	700 l/min
Purification system	P41/350	P41/350	P61/350
Weight (Super Silent) ²	389 kg	468 kg	493 kg
Weight (open model) ²	299 kg	378 kg	403 kg
Dimensions (LxWxH) Super Silent ²	1600 x 830 x 1515 mm		
Dimensions (LxWxH) open ²	1260 x 830 x 1515 mm		

¹ Measured during cylinder filling from 0-200 bar tolerance +/- 5% at + 20°C ambient temperature.

² Standard model. Weight and dimensions may vary depending on accessories.

Drive system: e-motor	PE320-VE-OX	PE550-VE	PE700-VE
Power	7.5 kW	11 kW	15 kW
Type	Three-phase Squirrel-Cage-Motor		
Operating voltage / frequency ¹	400 V, 50 Hz	400 V, 50 Hz	400 V, 50 Hz
Rated current	approx. 14.2 A (at 400 V/50 Hz)	approx. 20.8 A (at 400 V/50 Hz)	approx. 28 A (at 400 V/50 Hz)
Speed approx.	approx. 3,000 1/min	approx. 3,000 1/min	approx. 3,000 1/min
Protection class	IP55 (TEFC)		

¹ Other voltages and frequencies available on request against additional price.

› **Compressor block, suitable for nitrox**

STANDARD SCOPE OF SUPPLY:

- Oil pump for forced-feed lubrication
- Micronic intake filter: 10 µm
- Intermediate coolers, air cooled, stainless steel
- Aftercooler, air cooled, outlet temperature approx. 10-15 °C above cooling air temperature
- Intermediate separators after each stage (except 1st stage)
- Sealed safety valves after each stage
- TÜV approved final pressure safety valve
- Pressure maintaining and check valve after the final stage

Compressor block	IK12.14	IK150	IK180
Charging rate ¹	320 l/min	550 l/min	700 l/min, 850 l/min
Speed approx.	1,450 1/min	1,230 1/min	1,400 1/min
Number of stages	4	4	4
Number of cylinders	3	4	4
Cylinder bore 1st stage	105 mm	120 mm	130 mm
Cylinder bore 2nd stage	88 mm	60 mm	60 mm
Cylinder bore 3rd stage	28 mm	32 mm	32 mm
Cylinder bore 4th stage	12 mm	14 mm	14 mm
Stroke	40 mm	50 mm	50 mm
Direction of rotation (from flywheel side)	Left	Left	Left
Drive type	V-belt	V-belt	V-belt
Intermediate pressure 1st stage	4.2 bar	4.5 bar	4.5 bar
Intermediate pressure 2nd stage	18 bar	17 bar	20 bar
Intermediate pressure 3rd stage	82 bar	73 bar	85 bar
Compressor block oil volume	2.8 l	6.0 l	6.0 l
Oil pressure	4.5 bar ± 1.5 bar	4.5 bar ± 1.5 bar	4.5 bar ± 1.5 bar
Intake pressure / Inlet pressure	1.0 bar _a	1.0 bar _a	1.0 bar _a

¹ Measured during cylinder filling from 0-200 bar tolerance +/- 5% at + 20°C ambient temperature.

› **Purification Systems**

P41/350 (Integrated in PE 320-VE-OX and PE 550-VE-OX) and **P61/350** (integrated in PE 700-VE-OX) **filter with separate final oil and water separator:**

SCOPE OF DELIVERY:

- 1x filter housing with long-life filter cartridge
- Separator unit with final pressure safety valve
- Check valve between separator and micro filter
- Micro filter
- Air bleeder valve with manometer
- Pressurizer / check valve
- Filter key for cartridge renewal

Air quality as per DIN/EN 12021:2014:

Contamination with	Maximum content as per DIN EN 12021:2014:	Air quality by BAUER
H ₂ O	25 mg/m ³	≤ 10 mg/m ³
CO	5 ppm(v)	Depends on cartridge ¹
CO ₂	500 ppm(v)	Depends on intake air ²
Oil	0.1 mg/m ³	≤ 0.1 mg/m ³

¹ Only with BAUER special filter cartridge with hopcalite and up to a maximum concentration of 25 ppm CO in intake air. The compressed clean breathing air then contains a maximum of 5 ppm CO.

² Where the intake air exceeds the maximum permissible level of CO₂ as per DIN EN 12021:2014, use of a BAUER AERO-GUARD system is **urgently recommended!**



Purification system P41/P61 (picture similar)

Purification system	P41/350	P61/350
Operating pressure (Standard)	PN200 / PN300	
Operating pressure max. (PS)	350 bar	
Pressure dew point	< -20 °C, equivalent to 3 mg/m ³ at 300 bar	
Piping connections	G 3/8" (condensate drain G 1/4")	
Filter housing volume	2.1 l	2.85 l
DGRL 2014/68/EU	Vessel category II	
Air purification capacity (at ambient temperature 20°C and 300 bar) ¹	1,595 m ³	2,475 m ³

¹ When using a BAUER filter cartridge without Hopcalite. When using a cartridge with CO-removal the air purification capacity is reduced. Different values for SECURUS cartridges.

› B-CONTROL MICRO electronic control unit

The B-CONTROL MICRO is a modern, easy-to-operate compressor control unit with colour display that intelligently controls and all basic compressor functions and monitors their safety. User-friendly navigation and clear display of all main compressor parameters.



B-CONTROL MICRO Display

Compressor control unit	B-CONTROL MICRO
Ambient temperature:	-10°C to + 60°C (5-90% humidity; non-condensing)
Standard operating voltage	24 V DC
Protection class, control cabinet:	IP 55
Protection class, display:	IP 65
Type, display	3.5" colour display with clear text

FEATURES

- Displays current operating pressure, operating hours and operation type
- Displays remaining filling time for breathing air cylinders
- Semiautomatic and fully automatic operation options
- Standard SI unit selection for pressure and temperature
- User-friendly navigation and display (user interface)
- Displays service and maintenance intervals and maintenance information
- Password protection for various menu levels
- Log stores incident history
- Simple software update uses SD card
- Cycle counter and operating hours counter
 - Safety: Information when pressure vessels require replacement
- Numerous language options (German, English, French, Chinese, Czech, Danish, Dutch, Finnish, Italian, Japanese, Norwegian, Polish, Portuguese, Russian, Swedish, Spanish, and more)

MONITOR / CONTROL FUNCTIONS

- Oil pressure monitoring
 - Protection from incorrect rotation direction
- Temperature monitoring inside the gas flow of all stages as well as inside the final oil and water separator, including automatically switch off
- B-SECURUS monitoring (via CAN bus)
 - Safety: Shuts down compressor when filter cartridge is fully saturated
- Motor overcurrent (indirect by PTC)

INTERFACES

- CAN bus for internal use
- Remote Start/Stop (dry contact)
- External emergency off switch
- Centralised alarm (dry contact)
- External connection options for: B-SECURUS, SECCANT, B-KOOL , external display, external operating field, gas measurement systems, 40 litre condensate collector
- Ethernet connection for communication with the B-APP

› Automatic condensate drain system Single B-DRAIN

The automatic condensate drain automatically removes the condensate that forms during compression (water/oil mixture) from the intermediate separators and the final separator and collects it in a condensate vessel, which is integrated in the compressor.

The newly developed and patented single B-DRAIN automatic condensate drain uses individually controlled solenoid valves to ensure reliable, automatic condensate removal from the compressor separators.



B-DRAIN

Automatic condensate drain system	
Control voltage	24 V DC
Solenoid valve	normally open (NO)
Condensate collector capacity	approx. 10 l

OPTIONS:

› SUPER SILENT housing

Super Silent compressor housing is fully noise-insulated with optimised cooling air intake. The Super Silent soundproofed housing is recommended for applications where reduced noise is a priority, e.g. work environments.

- Closed design features targeted cooling air intake.
- Housing parts are easy to remove, ensuring fast access for maintenance.
- An exhaust air duct is easy to fit.
- Reduces acoustic pressure to:
 - 72 dB(A) ± 2 dB(A) (ISO 3744) 7.5 kW to 15 kW
- Finish: Basic frame RAL 7024, housing RAL 9006 and RAL1028
- The Super Silent housing can be retrofitted.



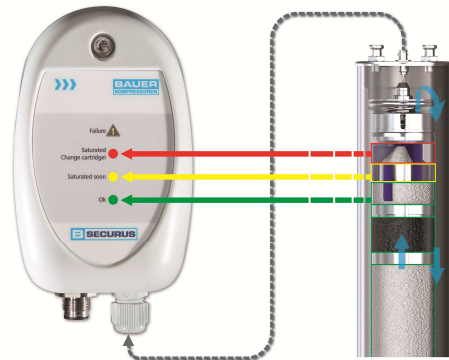
PE 550-VE-OX with SUPER SILENT housing

› B-SECURUS filter cartridge monitoring system

The B-SECURUS system continuously monitors filter cartridge saturation levels by measuring the moisture in the molecular filter and showing a warning in the display of the B-CONTROL MICRO unit when it is time to change the cartridge. When the dryer cartridge is 100% saturated the B-SECURUS automatically shuts down the system.

The B-CONTROL unit displays the following warnings:

- Green segment: Filter cartridge OK
- Yellow segment: Cartridge nearing saturation
- Red segment: Cartridge saturated or contact fault. Compressor is shut down



B-SECURUS Filter Cartridge Monitoring System

Filter cartridge monitoring unit	B-SECURUS
Supply voltage	24 V DC
Power consumption	3 VA
Contact switching capacity	6 A/250 V
Protection class	IP 65

› **Integrated B-DETECTION PLUS i Gas measurement system**

The online gas measurement system B-DETECTION PLUS monitors the quality of the compressed air: Measurement of CO, CO₂, O₂ as well as optional absolute humidity (as option) and VOC (as option). By means of the B-CONTROL control, you can at any time observe compliance with the limit values of the breathing air standard DIN EN 12021:2014. In the case of an exceedance of the limit, the control system will show an alarm on the display by means of an optical warning signal and switch off the system before air contaminated with pollutants enters the breathing air bottles.

An automatic flush valve (optional) ensures that the contaminated air is directed into the open air without interrupting the operation of the system if short-term limit values are exceeded.



B-DETECTION PLUS I integrated in PE-VE compressor

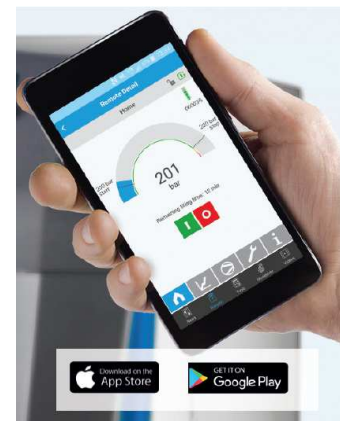
› **B-APP**

B-APP allows users to remotely control and monitor compressors with the new B-CONTROL MICRO. B-APP also offers additional features such as product-specific news, videos, an integrated dealer search function and calculation tools. Available in the AppStore (iOS) and on GooglePlay (Android).

As a requirement for the B-APP remote function, the B-CONTROL MICRO compressor control unit must have a valid IP address and be connected to the same local area network (LAN/WLAN) as the mobile device.

The integration of the B-CONTROL MICRO into the local network (home router, DSL router, company network) is implemented either via network cable or with optional LAN-WLAN gateway via wireless LAN.

Alternatively, if there is no local network for integration of the compressor control, an optional LAN-WLAN gateway can also be used to create a separate local WLAN network of the B-CONTROL MICRO. The smartphone can be logged into this network to permit use of the remote function in the B-APP.



Controlling the PE-VE with the B- APP

› **B-LINK**

WLAN Access Point/Client. For a WLAN network for communication between B-CONTROL MICRO +Net and B-APP (remote function).

- Preconfigured as access point: Direct WLAN connection with device (smartphone, tablet).
- Client: For connection to existing WLAN (home router, DSL router, company network). Configuration is performed by the customer.

The WLAN module is already installed at a suitable location in the compressor and connected ready for operation.



B-LINK

› **PN200 filling device for nitrox**

Filling Device	4xPN200 (Nitrox)
Nominal pressure (PN)	200 bar
Valve type	4 filling valves
Filling hose	4 Unimam high pressure filling hose, 1 m length
Pressure display	1 Manometer, as well as on the B-CONTROL display
Threaded connection	M26x2
Corresponding standard	DIN 144-3

› **External filling panels with nitrox devices**

These external filling panels can be wall-mounted as separate panels and are suitable for remote operation for installation in a separate room.

› **Condensate collection system 40 l**

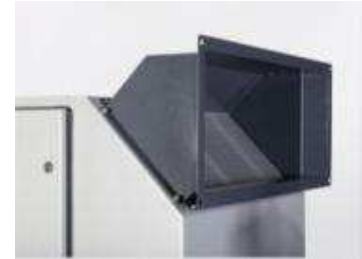
- 60-litre PVC tank, capacity approx. 40 litres
- Exhaust air is filtered by a soundproofed active charcoal filter
- Filling level display with visual warning when the collector requires emptying (optionally with signal for B-CONTROL)
- Drain tap for condensate, connector thread G 1/2"
- Dimensions: Ø 400 mm x 1,000 mm, weight approx. 15 kg



40 l Condensate collection system

› **Exhaust air duct**

- Exhaust air duct for cooling air flow outlet optionally at top or rear, with connection option for exhaust air channel
- For mounting on the compressor housing



Standard exhaust air duct

Note: The exhaust air duct can only be mounted on the Super Silent housing!

› **Exhaust air duct with ventilating shutters**

An exhaust air duct with ventilating shutters is used with compressors installed in a container or compressor room to regulate ambient temperature. At low ambient temperatures (e.g. < +5 °C) the heated cooling air heats the room; at high ambient temperatures the heated cooling air is directed outdoors.



Exhaust air duct with ventilating shutters mounted on a VERTICUS 5

SCOPE OF DELIVERY

- Exhaust air duct with canvas flange for exhaust channel (to be supplied on site)
- Louvers for circulating air control
- Actuating drive for louvers
- Electronic high - low action control system incl. temperature sensor (mounted in compressor air intake duct; set value +18 ± 4°C)
- Mounted on compressor housing incl. electric installation

Important: If the pressure drop is exceeded by 5 mmWS = 0.5 mbar (e.g. when the exhaust air duct is very long), an additional fan has to be provided on site.

The system can be mounted on the top or rear of the compressor (please state requirements when ordering).

› **B-KOOL refrigeration dryer**

The B-KOOL Refrigeration Dryer cools the compressed air and thus extends the service life of filter cartridges many times over.

The B-KOOL cools the hot saturated air in the compressor to approx. +3 °C, enabling the final separator to extract significantly higher volumes of condensate and thus extending the service life of the downstream filter cartridges. The normal service life (capacity) of a filter cartridge can be extended many times over by additional cooling of the compressed air with the B-KOOL refrigeration dryer. The higher the ambient temperature, the longer the lifespan of the filter cartridges when the B-KOOL is used.



B-KOOL stand-alone

TYPES

- B-KOOL 680i, integrated (mounted on a PE-VE with Super Silent housing)
- B-KOOL 680s standalone positioned next to the compressor

TECHNICAL OPERATING DATA:

Model	B-KOOL 680i and B-KOOL 680s
Medium	Pressurised air
Ambient temperature	+5 °C to +45°C
Refrigerant	R 134 a
Intake temperature of pressurised air	max. 60°C
Max. operating pressure, pressurised air	350 bar / 500 bar
Min. operating pressure, pressurised air	100 bar
Permissible compressor charging rate	200 – 700 l/min (10 l cylinder filling from 0-200 bar) 200 – 650 l/min (as per ISO 1217)
Power supply	100 – 127 VAC 50 Hz oder 200 – 240 VAC 50/60 Hz
Power consumption	max. 550 W at 50 Hz, 610 W at 60 Hz

DIMENSIONS; WEIGHT AND CONNECTIONS:

Model	B-KOOL 680i	B-KOOL 680s
Dimensions (LxWxH)	760 x 346 x 535 mm	386 x 695 x 565 mm
Weight approx.	50 kg	48 kg

An assembly kit for mounting on a compressor must be ordered separately and is essential.

➤ **AERO-GUARD(-OX) CO₂ Absorber**

Efficient removal of CO₂ from breathing air: A sophisticated bypass system feeds the compressor intake air through the AERO-GUARD. Only around two-thirds of the air passes through the filter cartridge that absorbs the CO₂ from the air. This process reduces the CO₂ content to one-third of that of the intake air.

NITROX VERSION: An ingenious bypass system passes the NITROX generated by the NITROX membrane system through the AERO-GUARD-OX. Only about four fifths of the air flow through the filter cartridge, which absorbs the CO₂ contained in the NITROX. This reduces the CO₂ content to around 20% of the value at the membrane outlet.



AERO-GUARD

SCOPE OF DELIVERY, AERO-GUARD:

- Intake pipe (order connections separately)
- Water barrel, 60 l (for AERO-GUARD DUO – 2 x water barrels each 60 l)
- Filter cartridge; filling: 9 kg special carbon dioxide absorber

MODELS:

Type / Size	Suitable for charging rate ¹	Dimensions (W x D x H)	Operating weight ²
	l/min	cm	
Aero-Guard-S	100 – 150	50 x 46 x 72	26 kg
Aero-Guard-M	160 – 230		
Aero-Guard-L	240 – 320		
Aero-Guard-XL	330 – 450		
Aero-Guard-XXL	460 – 700		
Aero-Guard Duo 1000	650 – 1000	85 x 62.5 x 87	54 kg
Aero-Guard-OX-L	260 – 320	50 x 46 x 72	26 kg
Aero-Guard-OX-XL	330 – 450	50 x 46 x 72	26 kg

¹ Charging rate of the connected compressor measured with cylinder filling from 0 – 200 bar ± 5%.

² Includes filter cartridge and 10-litre water ballast.

TECHNICAL OPERATING DATA:

Model	AERO-GUARD S-XXL	AERO-GUARD DUO 1000	AERO-GUARD-OX L-XL
Medium	Pressurised air		NITROX (max. 40 Vol% O ₂), Pressurised air
Ambient temperature	+5 to +45°C		
Intake air temperature	+5 to +45 °C		
Rel. humidity of intake air	10 to 100 %		10 to 60 %
CO ₂ intake air concentration	max. 1000 ppm _v CO ₂		max. 2000 ppm _v CO ₂
CO ₂ output air concentration	1/3 of intake concentration = max. 330 ppm _v CO ₂ at 1,000 ppm _v intake concentration CO ₂		1/5 of intake concentration = approx. 400 ppm _v CO ₂ at 2000 ppm _v intake concentration CO ₂
Designed for compressor charging rate	100 – 700 l/min	650 – 1,000 l/min	260 – 450 l/min
Service life	Min. 43 operating hours (at 700 l/min output and intake concentration of 1000 ppm CO ₂). Cartridge must be changed after max. one year even if the maximum service life is not reached.	Min. 60 operating hours (at 1000 l/min output and intake concentration of 1000 ppm CO ₂). Cartridge must be changed after max. one year even if the maximum service life is not reached.	Approx. 37 operating hours (at 450 l/min output and intake concentration of 1000 ppm CO ₂). Cartridge must be changed after max. one year even if the maximum service life is not reached.
Maximum daily operating time:	5 h		
Cartridge filling:	Approx. 9 kg special carbon dioxide absorber per cartridge		
Pressure loss	Approx. 20 mbar		
Max. permissible tilt	15°		
Permissible altitude	0 - 2000 m AMSL		
Finish	Container blue, cover black/silver, PVC pipes grey RAL7011		

Relevant EC Directives (where applicable)

- › EC Machinery Directive
- › EC Pressure Equipment Directive
- › EC Low Voltage Directive
- › EC Electromagnetic Compatibility (EMC)

Documentation: 1x operating manual and parts list with exploded view drawing on DVD

Design: In line with the state of the art according to DIN, VDE, TÜV and Accident Prevention regulations

Testing: In line with Bauer Standard as per DIN EN 10204 - 3.1

Otherwise the **General Terms and Conditions of BAUER KOMPRESSOREN (AGB)** in the version valid at the time of contract conclusion apply. These Terms & Conditions can be viewed and downloaded at the website www.bauer-kompressoren.com, or sent by BAUER on request.

All information is given without assumption of liability and subject to technical changes.