

Stationary High Pressure Compressor for Air and Breathing Air Compression

Types:

PE 320-VE | PE 500-VE | PE 600-VE

Production status: F04



PE-VE in open version

General	
Medium	Air
Intake pressure	Atmospheric
Filling pressure	PN200 / PN300
Pressure setting, final pressure SIV	225 bar / 330 bar / 350 bar / 420 bar
Pressure setting, pressure sensor	220 bar / 320 bar / 340 bar / 400 bar
Permissible ambient temperature range	+5...+45°C
Permissible altitude	0...1500 m AMSL
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 : every 2 years / 2,000 h Mineral: 1x annually / 1,000 h
Finish	RAL 1028 (front) / RAL 9006 (side panels)

Compressor system	PE 320-VE	PE 500-VE	PE 600-VE
Charging rate ¹	320 l/min	500 l/min	560 l/min
Purification system	P 41/420	P 41/420	P 61/420
Cooling air flow, min.	2,700 m ³ /h	3,960 m ³ /h	5,400 m ³ /h
Weight (Super Silent) ²	305 kg	345 kg	360 kg
Weight (open model) ²	395 kg	435 kg	450 kg
Dimensions (LxWxH) Super Silent ²	(1140 x 830 x 1515) mm		
Dimensions (LxWxH) open ²	(1480 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	PE 320-VE	PE 500-VE	PE 600-VE
Motor power	7.5 kW	11 kW	11 kW
Model	160	160	160
Type of construction	B3	B3	B3
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. 20.8 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.

STANDARD SCOPE OF SUPPLY:

› Compressor block with following features

- 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	IK18.1
Compressor unit	PE 320-VE	PE 500-VE, PE 600-VE
Charging rate ¹	320 l/min	500 & 560 l/min
Speed approx.	1,450 1/min	1,170 1/min (500 l/min), 1,490 1/min (560 l/min)
Number of stages	4	5
Number of cylinders	3	4
Cylinder bore 1st stage	105 mm	120 mm
Cylinder bore 2nd stage	88 mm	85/60 mm
Cylinder bore 3rd stage	28 mm	32 mm
Cylinder bore 4th stage	12 mm	18 mm
Cylinder bore 5th stage	-	10 mm
Stroke	40 mm	50 mm
Direction of rotation from flywheel side	Left	Left
Drive type	V-belt	V-belt
Intermediate pressure 1st stage	4.2 bar	2.9 - 4.3 bar
Intermediate pressure 2nd stage	18 bar	13 - 15 bar
Intermediate pressure 3rd stage	82 bar	42 - 48 bar
Intermediate pressure 4th stage	-	121 - 168 bar
Compressor block oil volume	2.8 l	6.0 l
Oil pressure	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 Measured during cylinder filling from 0-200 bar tolerance +/- 5% at + 20°C ambient temperature.

› **Purification Systems**

- › **P 41 - Filter with separate final oil and water separator:** Integrated in PE 320-VE and PE 500-VE
- › **P 61 - Filter with separate final oil and water separator:** Integrated in PE 600-VE

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



P 61 purification system (picture similar)

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	0.5 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	P 41/420	P 61/420
Operating pressure (Standard)	PN200 / PN300 / PN 420	
Operating pressure max (PS)	420 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
- B-SECURUS monitoring (via CAN bus)
 - Safety: Shuts down compressor when filter cartridge is fully saturated
- Temperature monitoring
 - Safety: Monitors temperature (final stage)
- 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 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 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:
 - 68 dB(A) ± 2 dB(A) (ISO 3744) to 5.5 kW
 - 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.



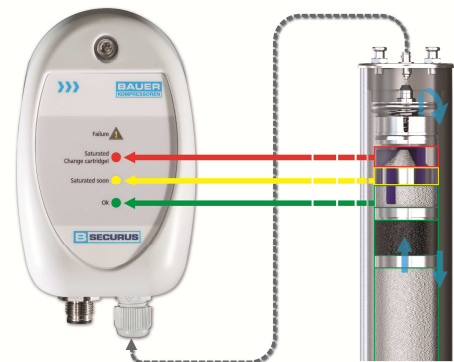
PE-VE 420 bar with SUPER SILENT housing

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

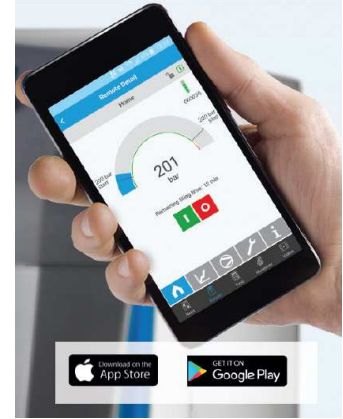
› B-APP

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

› Condensate collection system 40 I

- 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

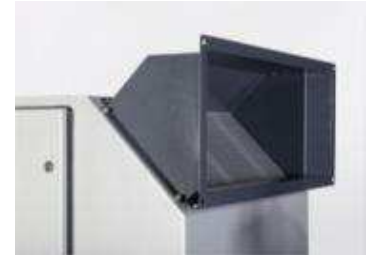


40 I Condensate collection system

› **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

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



Standard exhaust air duct

› **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. $< +5\text{ °C}$) 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 PE-VE

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 $+18 \pm 4\text{ °C}$)
- Mounted on compressor housing incl. electric installation

Important: If the pressure drop is exceeded by $5\text{ mmWS} = 0.5\text{ mbar}$ (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).

› **Extended base frame**

The compressor and up to 2 storage bottles each with a geometric capacity of 50 or 80 litres are installed on the extended base frame, making this a turnkey system.



Extended base frame with storage bottles

Extended base frame

Weight ¹	33 kg
Dimensions (L x W x H) ¹	1920 x 790 x 1530 mm

¹ Without storage bottles.

› High-pressure storage systems

Modular high-pressure storage system for storage of air / gases, extendable. The storage units can be set up separately or on an extended basic frame (to be ordered separately).

The extended basic frame enables the compressor and up to 2 storage cylinders with a geometric volume of 50 / 80 litres each to be combined in a turnkey system.



B50

B100

SCOPE OF DELIVERY:

- **B 80 S / B 160 S – Standard module**

Storage cylinder(s) upright, mounted on console, connection at bottom, with safety valve and manometer, globe valve and condensate drain / air bleeder valve.

- **B 80 A / B 160 A – Extension module**

To extend the above standard modules as required for storage of high volumes. Scope of delivery as standard module but without safety valve and manometer; where multiple storage cylinders are to be added, a connection is required for each additional extension module.

- **B 80 B, without console**

Storage cylinder, with cylinder valve; excluding condensate drain valve
Option: Clamp for wall mounting, safety valve (supplied loose)
Where multiple storage cylinders are to be added, a connection is required for each additional extension module.

- **B 50 S / B 100 S - Standard module**

Storage cylinder(s) upright, mounted on console, connection at top (360 bar) or at bottom (420 bar), with safety valve and manometer, globe valve and condensate drain / air bleeder valve.

- **B 50 A / B 100 A - Extension module**

To extend the above standard modules as required for storage of high volumes. Scope of delivery as standard module but without safety valve and manometer; where multiple storage cylinders are to be added, a connection is required for each additional extension module.

FINISH:

- Console RAL 7024 (grey) Storage container RAL9010 (white for B80/160) or RAL 7024 (grey for B50/100).

OPTIONS

- Mounting of one or two storage cylinders on common base frame (e.g. with MINI-VERTICUS, VERTICUS, PE-VE) including individual TÜV approval (necessary as proof of CE conformity of full system).
- Safety valve additionally with TÜV approval (certificate)

TECHNICAL SPECIFICATION

	Up to 330 bar		Up to 420 bar	
	B 80	B 160	B 50	B 100
Numbers of storage bottles:	1	2	1	2
Storage medium:	Air, Nitrogen, Rare gases			
Geometric volume cylinder:	80 Litre		50 Litre	
Geometric volume storage:	80 Litre	160 Litre	50 Litre	100 Litre
Safety valve max.:	330 bar		420 bar	
Storage pressure max.:	320 bar		400 bar	
Weight:	145 kg		125 kg	250 kg
Design as per:	DGRL 2014/68/EU ¹			

¹ Other certificates / approvals on request.

› Automatic selector unit

The automatic selector unit enables pressurised air cylinders (bottles) to be filled rapidly and in parallel from a buffer (intermediate storage system and by the compressor.



Automatic selector unit

SCOPE OF DELIVERY

- Painted steel base plate for wall mounting
- Pressuriser valve
- Check valve
- Pressure switch or pressure sensor, depending on the connected compressor control unit
- Manometer for filling pressure
- Manometer for storage pressure

TECHNICAL OPERATING DATA:

Automatic selector unit	
Medium	Pressurised air
Ambient temperature	+5 °C to +45°C
Operating pressure	Max. 350 or 420 bar (depending on design)
Air intake/outlet	10 mm (outside connector diameter)

› 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 higher the ambient temperature, the longer the lifespan of the filter cartridges when the B-KOOL is used.



B-KOOL standalone

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 or 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 (L x W x H)	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 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.

SCOPE OF DELIVERY, AERO-GUARD:

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



AERO-GUARD

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

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
Medium	Pressurised air	
Ambient temperature	+5 to +45°C	
Intake air temperature	+5 to +45 °C	
Rel. humidity of intake air	10 to 100 %	
CO ₂ intake air concentration	max. 1,000 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	
Permissible compressor charging rate	100 – 700 l/min	650 – 1,000 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.
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 - 2,000 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.