Technical data sheet

Series:

KAP-H

Stationary High Pressure Compressor for Air and Breathing Air Compression

Types:

KAP15.1-11-H | KAP 150-11-H | KAP 180-15-H

Production status: F02

KAP-H

General	
Medium	Air
Intake pressure	Atmospheric
Filling pressure	PN200 / PN300
Pressure setting, final pressure SIV	225 bar / 330 bar
Pressure setting, pressure sensor	220 bar / 320 bar
Permissible ambient temperature range	+5...+45°C
Permissible altitude	0...1500 m AMSL
Max. permissible tilt	10°
System type	Open
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: annually / 1,000 h
Finish	CYAN (front) / RAL 7024 (frame)

Status: 30/01/2015

Compressor system	**KAP15.1-11-H**	**KAP150-11-H**	**KAP180-15-H**
Charging rate [1]	450 l/min	540 l/min	680 l/min
Purification system	P 41 DUO	P 41 DUO	P 41 DUO
Cooling air flow, min.	3,960 m³/h	3,960 m³/h	5,400 m³/h
Weight [2]	370 kg	370 kg	385 kg
Dimensions (LxWxH) [2]	1465 x 860 x 970 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	**KAP15.1-11-H**	**KAP150-11-H**	**KAP180-15-H**
Motor	Three-phase Squirrel-Cage-Motor		
Power	11 kW	11 kW	15 kW
Type	160 M	160 M	160 M
Type of construction	B3	B3	B3
Operating voltage / frequency [1]	50 Hz / 400 V [1]	50 Hz / 400 V [1]	50 Hz / 400 V [1]
Protection class	IP55		

1 Different voltage / different frequency available at extra charge on request.

Status: 30/01/2015

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 2nd stage
- Final separator for oil and water condensate after last stage
- Sealed safety valves after each stage
- TÜV approved final pressure safety valve
- Pressure maintaining and check valve after the final stage

Compressor block	**IK15.1**	**IK150**	**IK180**
Compressor unit	KAP15.1-11-H	KAP 150-11-H	KAP 180-15-H
Charging rate [1]	450 l/min	540 l/min	680 l/min
Speed	1,320 1/min	1,230 1/min	1,400 1/min
Number of stages	4	4	4
Number of cylinders	4	4	4
Cylinder bore 1st stage	110 mm	120 mm	130 mm
Cylinder bore 2nd stage	60 mm	60 mm	60 mm
Cylinder bore 3rd stage	32 mm	32 mm	32 mm
Cylinder bore 4th stage	14 mm	14 mm	14 mm
Stroke	50 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	2.9 – 3.5 bar	2 - 3 bar	2.5 - 4 bar
Intermediate pressure 2nd stage	14 - 16 bar	14 - 16 bar	16 - 18 bar
Intermediate pressure 3rd stage	50 - 69 bar	65 - 70 bar	70 - 80 bar
Compressor block oil volume	5 l	5 l	5 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.

Status: 30/01/2015

P 41 DUO Purification System - Filter with separate oil and water separator

SCOPE OF DELIVERY:

- 2x 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 41 DUO purification system

Air quality as per DIN/EN 12021:

Contamination with	Maximum content as per DIN EN 12021	Air quality by BAUER
H_2O	25 mg/m³	≤ 10 mg/m³
CO	5 ppm(v)	Depends on cartridge [1]
CO_2	500 ppm(v)	Depends on intake air [2]
Oil	0.5 mg/m³	≤ 0.5 mg/m³

1 Only with BAUER special filter cartridge with hopcalite 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 CO_2 as per DIN EN 12021, use of a BAUER AERO-GUARD system is **urgently recommended!**

Purification system	P 41 DUO
Operating pressure (Standard)	PN200 / PN300
Operating pressure max (PS)	350 bar
Pressure dew point	< -20 °C, equivalent to 3 mg/m³ at 300 bar
Piping connections	G 3/8“ (condensate drain G ¼“)
Filter housing volume	2.1 l
DGRL 97/23/EG	Vessel category II
Processable air capacity (at ambient temperature 20°C and 300 bar)[1]	3,440 m³

1 When using a BAUER P 41 Duo filter cartridge without hopcalite.

Status: 30/01/2015

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)

Status: 30/01/2015

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

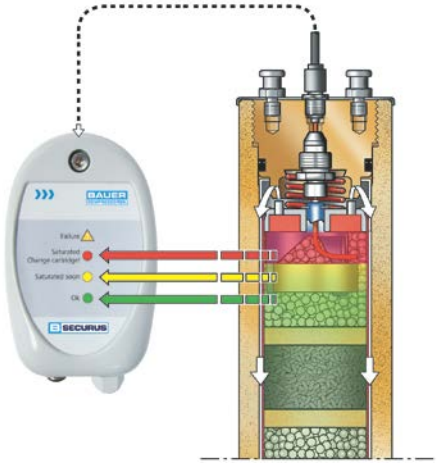
Automatic condensate drain system	
Type	Dual
Control voltage	24 V DC
Interval operation (closed / open)	15 min / 10 sec
Solenoid valve	normally open (NO)
Condensate collector capacity	approx. 10 l

Status: 30/01/2015

OPTIONS:

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.



B-SECURUS Filter Cartridge Monitoring 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

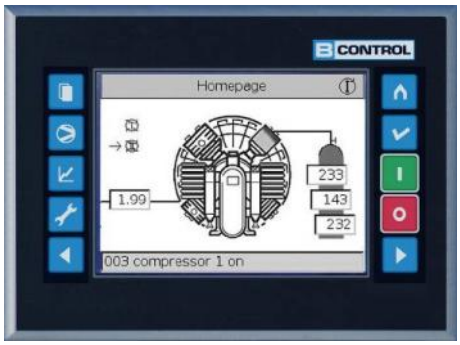
Filter cartridge monitoring system	B-SECURUS
Supply voltage	24 V DC
Power consumption	3 VA
Contact switching capacity	6 A/250 V
Protection class	IP 65

Status: 30/01/2015

B-CONTROL II compressor control unit

BAUER B-CONTROL II is the advanced version of the B-CONTROL MICRO basic compressor control unit. It features a touch screen display:

- Fully automatic operation in line with customer-specific parameters
- Monitors all relevant operating data
- Shuts down the system in the case of deviation from defined operating parameters
- Displays operating data, maintenance information, fault messages and trends
- Can be used as a master control unit



B-CONTROL II display

Compressor control unit	B-CONTROL II
Motor drive	Star delta starter
Output	7.5 kW
Control voltage	24 V DC
Type	Semi-automatic
Operating elements	5.7'' TFT colour display 240 x 320 pixels; touch screen plus 10 function buttons, clear text display
Standard features	▪ 5.7“ TFT colour touch screen display with clear text ▪ Fully automatic monitoring of relevant parameters; compressor shutdown if values exceed permissible ranges ▪ Choice of languages ▪ Oil pressure monitoring protects against incorrect rotation direction ▪ Maintenance information shown in display ▪ Log stores incident history ▪ Password protection for various menu levels ▪ Base load cycle and interconnected operation for up to 4 connected compressors ▪ Integrated data logger ▪ Cycle counter records load cycles of final separator stage ▪ Interface: USB 2.0, Ethernet 10/100, CAN bus Layer 2, Modbus RTU RS485, Profibus DP slave (optional) ▪ Remote On/Off (galvanically isolated) ▪ Centralised alarm (galvanically isolated) ▪ Simple software update via CF card or USB ▪ External connections for: B-SECURUS, SECCANT, B-KOOL, external display, external operating panel, fill level, gas balloon, gas measurement systems

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OPTIONS

- Monitoring of intermediate pressure throughout all compressor stages (using pressure sensor, values displayed in B-CONTROL II, compressor shutdown where permissible intermediate pressure is exceeded)
- Monitoring of temperature throughout all compressor stages (using Pt1000, values displayed in B-CONTROL II, compressor shutdown where permissible intermediate pressure is exceeded /under reached)

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 ½“
- Dimensions: ∅ 400 mm x 1.000 mm, weight approx. 15 kg

40 l Condensate collection system

Additional interstage separator after 1st stage

In operation in regions with high humidity, e.g. tropical regions, we recommend installing an interstage separator after the first compression stage. This can lengthen the service life of the system and reduce maintenance costs.

Interstage separator

Status: 30/01/2015

PN200 filling device

Filling Device	Direct filling connection	Hose filling connection
Nominal pressure (PN)	200 bar	200 bar
Valve type	4 lever filling valves with integrated air bleeder, with German cylinder connector G 5/8" DIN 477 and manometer, PN200	4 lever filling valves with integrated air bleeder, with German cylinder connector G 5/8" DIN 477 and manometer, PN200
Filling hose	4 Unimam high pressure filling hoses, length 1 m	4 Unimam high pressure filling hoses, length 1 m
International cylinder connector	1 international cylinder connectors	1 international cylinder connectors

PN300 filling device

Filling Device	Direct filling connection	Hose filling connection
Nominal pressure (PN)	300 bar	300 bar
Valve type	4 lever filling valves with integrated air bleeder, with German cylinder connector G 5/8" DIN 477 and manometer, PN200	4 lever filling valves with integrated air bleeder, with German cylinder connector G 5/8" DIN 477 and manometer, PN200
Filling hose	4 Unimam high pressure filling hoses, length 1 m	4 Unimam high pressure filling hoses, length 1 m

Status: 30/01/2015

KAP-H

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 / 420 bar

B100 / 360 bar

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).

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	330 bar		360 bar		420 bar	
	B 80	**B 160**	**B 50**	**B 100**	**B 50**	**B 100**
Number of storage containers	1	2	1	2	1	2
Storage medium	Air, nitrogen, noble gases					
Geom. volume per storage container	80 litres		50 litres		50 litres	
Geom. storage volume, total	80 litres	160 litres	50 litres	100 litres	50 litres	100 litres
Max. safety valve setting	330 bar		360 bar		420 bar	
Max. storage pressure	320 bar		350 bar		400 bar	
Weight	145 kg		92 kg + console	184 kg + console	80 kg + console	160 kg + console
Design as per	DGLR 97/23-EG und AD2000 [1]					

1 Other certificates / approvals on request

Automatic selector unit

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.

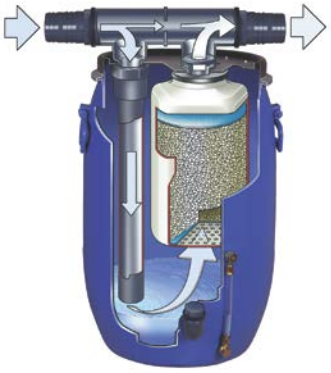
SCOPE OF DELIVERY

- 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

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)

Status: 30/01/2015

AERO-GUARD CO_2 Absorber



AERO-GUARD

Efficient removal of CO_2 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 CO_2 from the air. This process reduces the CO_2 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

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

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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. 1000 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	
Designed for compressor charging rate	100 – 700 l/min	650 – 1,000 l/min
Service life	Min. 44 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 1,000 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	

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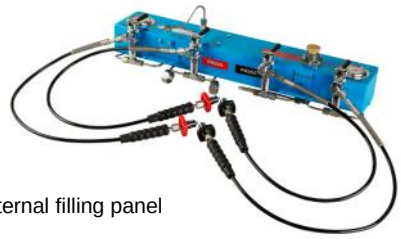
External filling panels



External filling panel

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

SCOPE OF DELIVERY:

- Direct filling connection or hose connection
- One or two pressure ranges PN200 and/or PN300 (second pressure range can be selected with a switching tap or permanently connected with a pressure reducer)
- 4, 6 or 10 filling connections
- High-pressure check of all components
- Flushing valve prevents excessive CO_2 content in compressed breathing air
- CE Mark

Filling connections	Dimensions (L × W × H) mm	Weight
	mm	kg
4 filling connections	1140 × 138 × 183	Depends on model
6 filling connections	1200 × 138 × 183	Depends on model
10 filling connections	1120 × 352 × 370	Approx. 33 kg

Status: 30/01/2015

Relevant EC Directives (where applicable)

- EC Machinery Directive (2006/42/EC)
- EC Pressure Equipment Directive (97/23/EC)
- EC Low Voltage Directive 2006/95/EC
- EC Electromagnetic Compatibility (EMC) 2004/108/EC

Applied national standards and technical specifications, in particular

- Betriebssicherheitsverordnung (German Industrial Safety Regulation) of 27 September 2002
- AD 2000
- Technische Regeln Druckgase (TRG; **Technical Regulations for Compressed Gases**):TRG 400, 401, 402 (w/o permanent premises) and TRG 790
- Unfallverhütungsvorschrift (BGR; German Accident Prevention Regulations) BGR 500
- All BAUER filter housings are designed, manufactured and tested in line with Accident Prevention Regulations and regulations under AD-2000 provisions and DGRL97/23EG.

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.

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