

KAP- / VERTICUS - RANGE

STATIONARY UNITS FOR  
FIREFIGHTING



260 - 1.480 l/min

Up to 420 bar

When firefighters are concentrating all efforts into saving people's lives, health and possessions, then there's only one thing that counts with fire: an uncompromising, reliable supply of pure breathing air.

For the past 60 years BAUER, as their partner, has been supplying the fire brigade and disaster prevention with breathing air compressors that are legendary as in regards to their reliability and durability.

## THE KAP- / VERTICUS RANGE

### FILLING SPECIALISTS FOR ALL PURPOSES

The wide range of BAUER-units offers the right solution for each purpose and need

Thanks to the **four-stage compressor blocks** and **robust industrial bearings** with lifetime expectancies of **more than 30.000 hours**, the VERTICUS- and KAP- range units can be **run continuously** without restrictions. All coolers, filters, valves and pipes are manufactured in **corrosion-free materials**. High-performance axial fans and a cleverly devised cooling air supply in the sound-proof silent units ensure an **optimum supply of cooling air**, a requirement necessary for a reliable application even under the most difficult external climatic conditions. The unit's design guarantees **good accessibility** for all routine **maintenance work**.

The VERTICUS range's **efficient housing sound insulation** permits trouble-free use even in a particularly sound-sensitive environment.



Up to 420 bar

#### KAP- / VERTICUS - Range

260 - 680 l/min

**Extremely compact powerful stationary filling centres.**

Scope of supply: 4 filling devices and B-Control to monitor and control all important compressor functions. The Verticus 5 - range: equipped with super silent housing.

Optional: bigger or additional filter housings, SECURUS filter monitoring, external filling panels and storage systems. Remote control, -monitoring of one or several units in interconnected operation via B-Messenger is possible.



#### KAP- / VERTICUS F - Range

450 l/min

**High-performance open or acoustically insulated units with the best price-performance ratio:**

The new 15.1 compressor block delivers 450 litres per minute. Otherwise technically identical to the standard VERTICUS range, the F-unit range offers a particularly good price-performance ratio thanks to the use of a conventional star-delta control.



### KAP-H-Range

450 - 680 l/min

#### Horizontal design for operation on heavy seas and extreme inclinations

The low centre of gravity and the block design allow the operation even on heavy seas.

Scope of supply similar to KAP-range, however, with P 41 DUO filter system and without filling devices.



### KAP-DAH - Range

450 - 680 l/min

#### Diesel driven unit for self-sufficient use in remote areas

Robust and low-maintenance diesel motor, particularly unsusceptible at high temperatures.

Same fuel with mobile use on diesel driven trucks and pick-ups.



### KAP-23 / 220 - Range

650 - 1480 l/min

#### Unlimited performance for high-damage incidents

The performance of the stationary KAP-range can meet every requirement. Designed and built for heavy continuous operation.

We plan custom-made system solutions with external filling panels, air purification systems and storage solutions for you.

Up to 420 bar

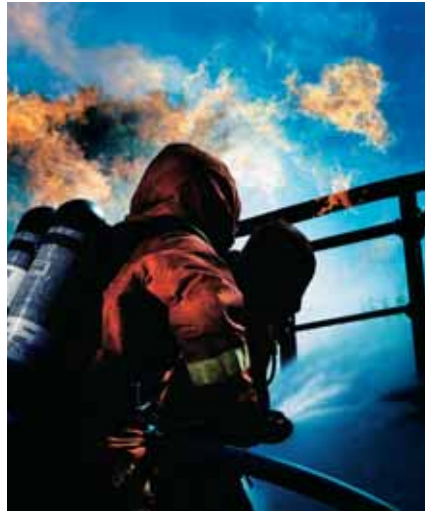
# BAUER SYSTEM TECHNOLOGY

## FOR A SOLUTION TAILORED TO THE CUSTOMER

### BAUER'S High Pressure System Technology

enables every fire fighting unit to tailor a unit according to their requirements.

This process begins at the conceptual stage and in the design and development of the compressor unit. BAUER perceives the design, development and evolution of its machines as a partnership between manufacturer and user. This philosophy is continuous in the approach to provision of spare parts, long-term maintenance contracts and product support to ensure every customer a first class service.



### Units for compression of breathing air

#### Pressure range:

225 to 420 bar

#### F.A.D.:

260 to 1.480 l/min

#### Design:

Open Configuration or Super Silent (Enclosed)

### Systems for purification of breathing air

#### AEROGUARD

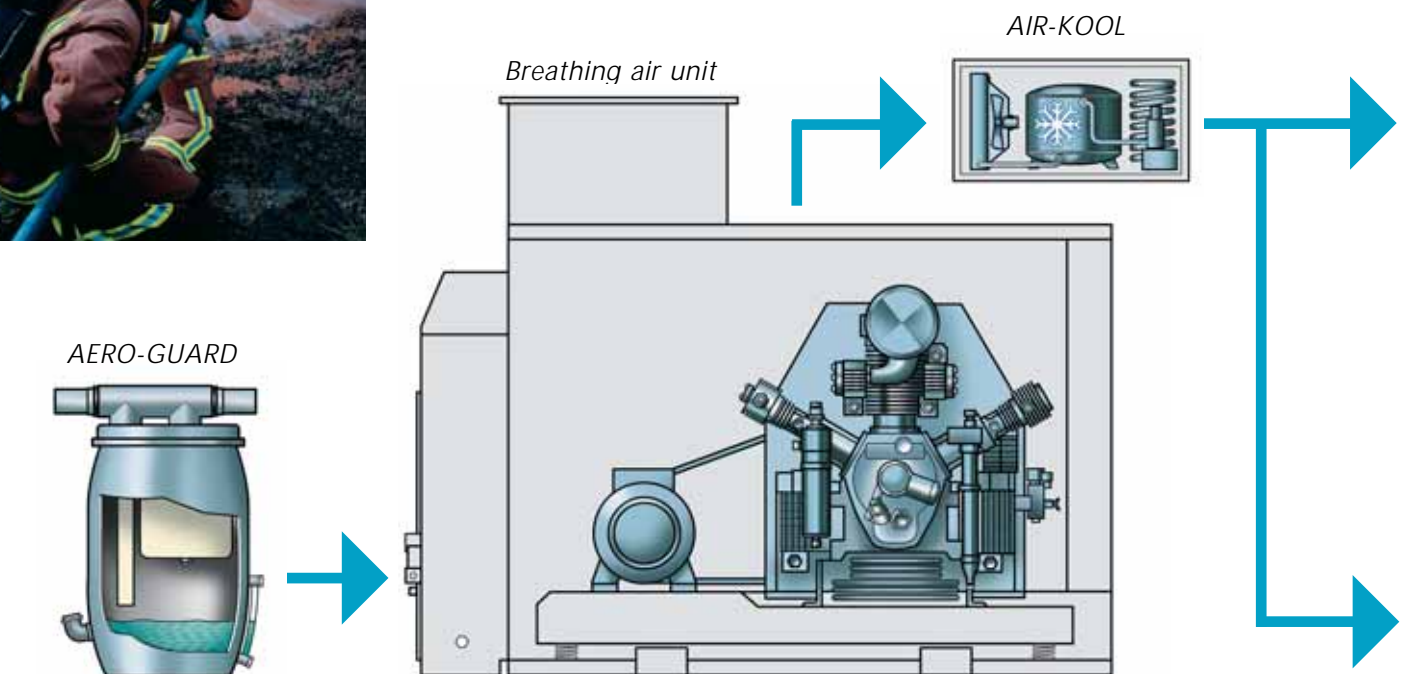
Removal of CO<sub>2</sub> prior to compression at intake side.

#### P-FILTER SYSTEMS

Generation of breathing air according to DIN EN12021 by efficient removal of humidity, oil, CO and solid particle contaminants.

#### SECCANT Regenerative Dryer

Made for continuous operation and efficient, economic purification air and gas.



Purification

Compression

Purification



### Systems for storage of high pressure air

#### Storages systems up to 420 bar

with 50 or 80 l\* water volume \*\*.

Units are available as single unit or as an extendable modular system to provide the required storage capacity.

Dependant upon physical limitations, various configurations can be provided to optimize the utilization of available space.

\* only up to 300 bar

\*\* geometric volume

### System for distribution of breathing air

#### Switch over device

for maximum rate cylinder filling. Switch on of unit only for topping up of storage cylinders.

**Pressure reducing panels:** for constant regulation of outlet pressure.

#### Filling panels

Available in a great variety of standard configurations to satisfy every need with options for switch over device to facilitate two separate pressure ranges.

### AIR-KOOL refrigeration dryer

Efficient drying of air for increasing the filter cartridge lifetime and effective resistance to corrosion of piping and components.

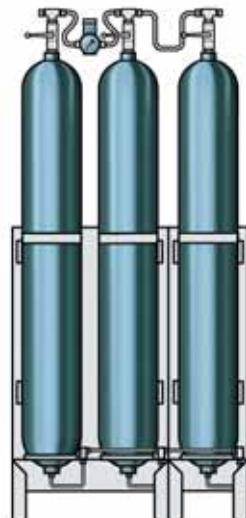
### AEROTEST SIMULTAN HP

Portable air test laboratory to carry out testing of the breathing air quality e.g the new, strict DIN EN 12021 standards.

AEROTEST



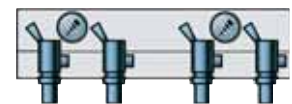
Switch over device



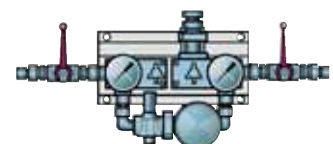
Storage bank



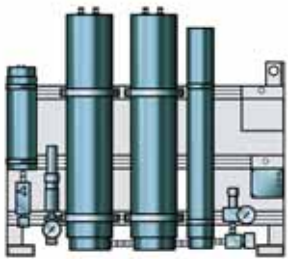
Filling panel



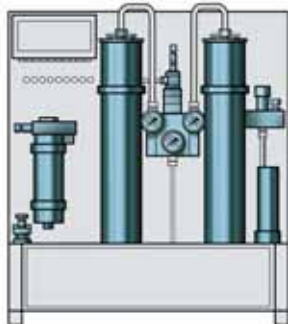
Pressure reducing panel



P-Filter System



SECCANT



## FILTER SYSTEMS MADE BY BAUER

### NO COMPROMISE REGARDING SAFETY !

#### Safety starts with processing quality.

BAUER manufactures **filter housings** only from costly **special aluminium alloy** or **tempered high-alloy steel**. This guarantees that the filter housings survive the **highest** of **pressures** up to 500 bar with tens of **thousands** of **filling cycles**.

Starting from the raw material up to the final filter housing the **manufacturing process** is subject to **perfect control** supervised by TÜV and **documented** with **stamped material-** and **production numbers**.



*Production- and material numbers guarantee a perfect production control*

#### Your life is at risk with fake cartridges!

Only **original cartridges** made by BAUER guarantee that **oil, humidity** or **hydrocarbons** in the compressed air are **completely removed**. The **limiting values** of BAUER filter systems comply with and exceed **all major national** and **international standards** such as DIN EN 12021 and medical air acc. to European

Pharmacy Requirements.

**Only** the most appropriate **filter media** of the **highest quality** are used.

In the BAUER Testing- and Research Centre the **composition** for the **respective application** is calculated, optimized and **extensively tested**.

#### Those, who buy cheap, buy expensive!

To achieve a **germfree** and **unsaturated** condition, a filter cartridge can only be filled under industrial production conditions. The **balance** of carbon and molecular sieve of BAUER original cartridges is **adjusted perfectly**.

**Mechanical filling** guarantees **exact dosing** and **piling** to create the perfect cross-flow of the cartridge for **optimum air purification**.

After filling the cartridges are vacuumized and the density is checked.

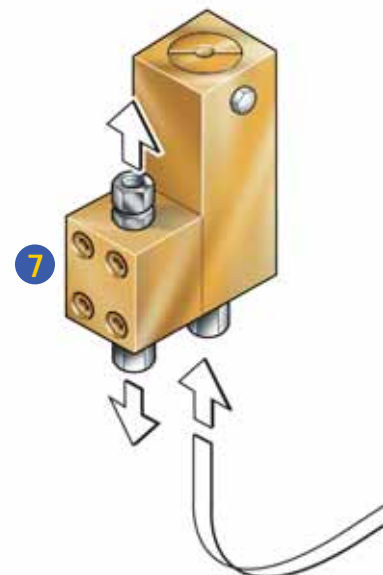
**Replacement cartridges** from **uncontrolled sources** **threaten** your **health** not only creating poor filter performance and icing of the breathing regulator, but also producing **corrosion**, which will rapidly **ruin** the **equipment**.



*Final separator assembly at BAUER*



*The quality seal of an original BAUER cartridge stands for purest breathing air*



### 1 The compressed air

from the compressor block is delivered to the final separator. The separator effectively separates oil- and water droplets.

### 2 The condensate

The condensate from the oil- and water droplets is collected at the bottom of the filter housing and is removed via the condensate drain valve.

### 3 The pre-purified air

flows from the bottom of the vessel through the molecular sieve, which adsorbs the remaining gaseous water. The pores of the granules are minute in diameter in order to provide continuous filtration and total removal of the water

molecules.

The molecular sieve used by BAUER matches perfectly the granule and pore size for the filter system. This is the only way to comply with the strict limiting values of breathing air norms.

### 4 Particle filter

holds all impurities and particles.

### 5 An activated carbon layer

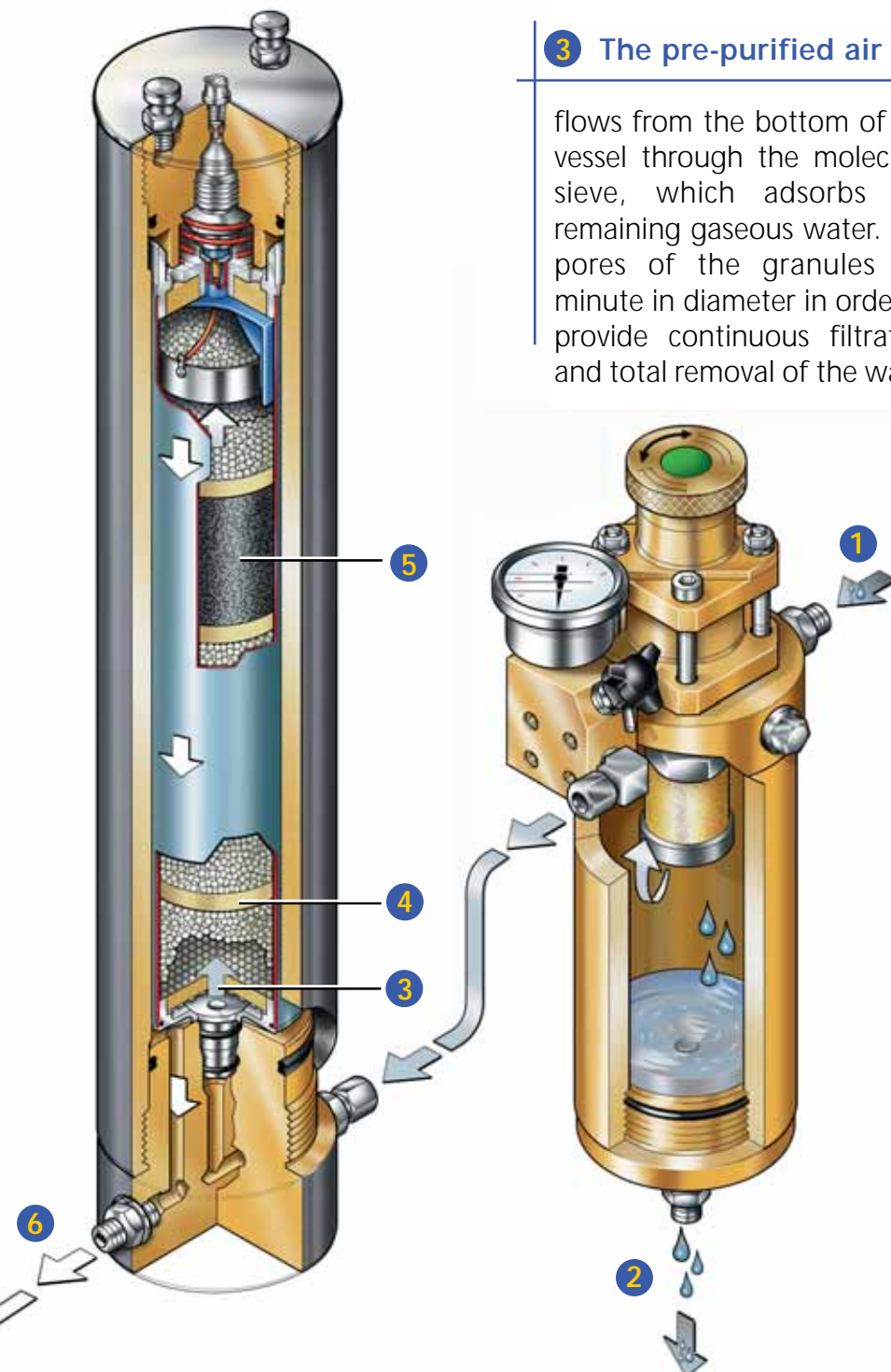
for breathing air applications removes all organic impurities such as oil vapour and hydrocarbons.

### 6 Purest air or gas

leave the filter cartridge and are ready for the application.

### 7 The pressure maintaining valve

keeps the filter housing continuously under pressure to increase the partial pressure on the molecular sieve. So the speed of the flow through the cartridge is reduced, which increases the purification effect even more. Load cycles are reduced, too - a positive effect on the lifetime of the filter housings and the operating safety.



## SECURUS FILTER MONITORING

### THE BODYGUARD OF YOUR FILTER SYSTEM

#### SECURUS protects against damage:

All filter cartridges have a limited life, which must be monitored.

The patented SECURUS system takes away from you the important but annoying responsibility of monitoring the cartridge for the necessary timely replacement.

With SECURUS it is impossible to overuse the filter, which would damage the following system with oil and water.

This can only be achieved with a patented sensor technology, which is integrated in the filter cartridge. The integrated sensor indicates the necessity for cartridge change prematurely, warning in time about the exhaustion of the cartridge capacity and, finally switches the compressor off.

Competitors systems, which are available in the market, which are fitted after the purification system, provide false safety!

They only warn the user when it is too late: When the cartridge is already damaged and impurities have occurred.

#### SECURUS helps to save money:

The cartridge can be used until complete saturation, without any safety reserve.

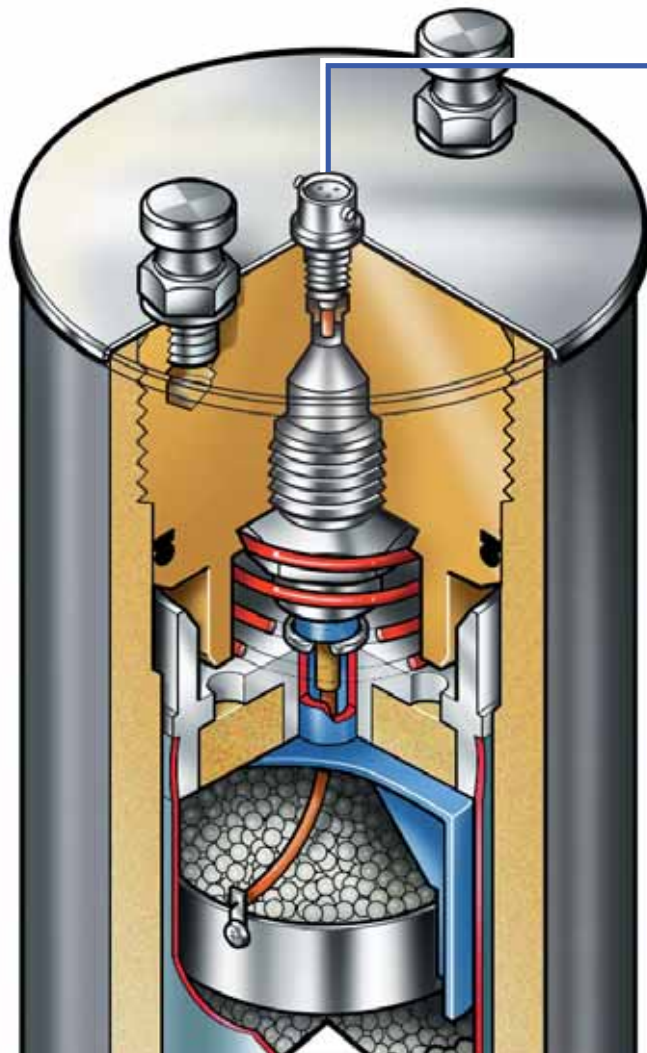
#### SECURUS is simple to operate

Mobile units, and those of the KAP/VERTICUS-F-Range have a control- and monitoring unit, which provides information about the saturation status of the cartridge, similar to a traffic light.

#### SECURUS and B-Control: full control - even online.

If the VERTICUS range is equipped with the SECURUS option, all messages are shown on the display of the electronic compressor B-CONTROL.

Operators, who make use of the new B-MESSENGER can receive information via SMS on their mobile telephone, via fax or even online via email!





with B-CONTROL compressor control



Compressor units

without B-CONTROL compressor control



### RED

The filter cartridge is saturated and must be exchanged. In this mode the compressor will be automatically switched off.



### YELLOW

Cartridge change will be required soon.



### GREEN

Cartridge has still sufficient capacity.

# BAUER STORAGE SYSTEMS AND FILLING PANELS

## FOR CUSTOM-MADE BREATHING AIR SUPPLY

High pressure tanks ensure air is available at all times.

A **perfectly designed storage solution** adapted to the compressor **guarantees constant availability of breathing air**, even in the case of a larger demand on short notice, independent of whether the compressor is running.

Yet another advantage: The unit only switches on if the pressure in the tank drops below the specified minimum value. Thanks to the **low number of load cycles** the **durability** of the unit's components like the filter housing or final separator, are subject to pressure fluctuations, **increase accordingly**.

In the course of **unit planning** and **consulting** our service team will naturally calculate the **custom-made storage solution** for your respective **unit size** and **individual filling requirement**.



Complete solution with storage tanks

Simplyfied formula for configuration of high pressure storage systems taking into consideration the compressor's 4 switch-cycles per hour.

$$V_{(l)} = \frac{V_k \times 4}{\Delta p}$$

$V_k$  (l/min) = volume of flow/delivery of the compressor in litres/min (F.A.D)

$V_{(l)}$  = storage volume in litres (water capacity)

$\Delta p$  (bar) = ON/OFF switch differential (range of pressure fluctuation) in bar

| Free air delivery of compressor<br>[ l/min ] | referring to a pressure hysteresis of $\Delta p$ (bar) |   |   |   |   |   |   |   |
|--|--|---|---|---|---|---|---|---|
|  | 20 bar   |   | 30 bar  |   | 40 bar  |   | 50 bar  |   |
|  | For-<br>mulated<br>storage<br>cyl.size<br>[ l ]        | Recom-<br>mended<br>storage<br>container<br>Units x l | For-<br>mulated<br>storage<br>cyl.size<br>[ l ] | Recom-<br>mended<br>storage<br>container<br>Units x l | For-<br>mulated<br>storage<br>cyl.size<br>[ l ] | Recom-<br>mended<br>storage<br>container<br>Units x l | For-<br>mulated<br>storage<br>cyl.size<br>[ l ] | Recom-<br>mended<br>storage<br>container<br>Units x l |
| 100  | 20   | 1 x 50  | 13  | 1 x 50  | 10  | 1 x 50  | 8   | 1 x 50  |
| 200  | 40   | 1 x 50  | 27  | 1 x 50  | 20  | 1 x 50  | 16  | 1 x 50  |
| 300  | 60   | 1 x 50  | 40  | 1 x 50  | 30  | 1 x 50  | 24  | 1 x 50  |
| 400  | 80   | 2 x 50  | 53  | 1 x 50  | 40  | 1 x 50  | 32  | 1 x 50  |
| 500  | 100  | 2 x 50  | 67  | 2 x 50  | 50  | 1 x 50  | 40  | 1 x 50  |
| 600  | 120  | 3 x 50  | 80  | 2 x 50  | 60  | 1 x 50  | 48  | 1 x 50  |
| 700  | 140  | 3 x 50  | 93  | 2 x 50  | 70  | 2 x 50  | 56  | 1 x 50  |
| 800  | 160  | 3 x 50  | 107   | 2 x 50  | 80  | 2 x 50  | 64  | 1 x 50  |
| 900  | 180  | 4 x 50  | 120   | 3 x 50  | 90  | 2 x 50  | 72  | 2 x 50  |
| 1000   | 200  | 4 x 50  | 133   | 3 x 50  | 100   | 2 x 50  | 80  | 2 x 50  |
| 1100   | 220  | 4 x 50  | 147   | 3 x 50  | 110   | 2 x 50  | 88  | 2 x 50  |
| 1200   | 240  | 5 x 50  | 160   | 3 x 50  | 120   | 3 x 50  | 96  | 2 x 50  |
| 1300   | 260  | 5 x 50  | 173   | 4 x 50  | 130   | 3 x 50  | 104   | 2 x 50  |
| 1400   | 280  | 6 x 50  | 187   | 4 x 50  | 140   | 3 x 50  | 112   | 2 x 50  |
| 1500   | 300  | 6 x 50  | 200   | 4 x 50  | 150   | 3 x 50  | 120   | 3 x 50  |
| 1600   | 320  | 6 x 50  | 213   | 4 x 50  | 160   | 3 x 50  | 128   | 3 x 50  |
| 1700   | 340  | 7 x 50  | 227   | 4 x 50  | 170   | 3 x 50  | 136   | 3 x 50  |
| 1800   | 360  | 7 x 50  | 240   | 5 x 50  | 180   | 4 x 50  | 144   | 3 x 50  |
| 1900   | 380  | 8 x 50  | 253   | 5 x 50  | 190   | 4 x 50  | 152   | 3 x 50  |
| 2000   | 400  | 8 x 50  | 267   | 5 x 50  | 200   | 4 x 50  | 160   | 3 x 50  |
| 2500   | 500  | 10 x 50   | 333   | 7 x 50  | 250   | 5 x 50  | 200   | 4 x 50  |
| 3000   | 600  | 12 x 50   | 400   | 8 x 50  | 300   | 6 x 50  | 240   | 5 x 50  |
| 3500   | 700  | 14 x 50   | 467   | 9 x 50  | 350   | 7 x 50  | 280   | 6 x 50  |
| 4000   | 800  | 16 x 50   | 533   | 11 x 50   | 400   | 8 x 50  | 320   | 6 x 50  |
| 4500   | 900  | 18 x 50   | 600   | 12 x 50   | 450   | 9 x 50  | 360   | 7 x 50  |
| 5000   | 1000   | 20 x 50   | 667   | 13 x 50   | 500   | 10 x 50   | 400   | 8 x 50  |

**Recommended HP Storage cylinder sizes** taking into consideration 4 compressor switch cycles per hour depending on compressor delivery and the different ON/OFF switch differentials.

## Filling panels - BAUER'S building block system for implementing the most diverse installation requirements and filling capacities

BAUER'S filling panels can be **mounted** on a **wall**, even physically apart in a **separate room**.

**Numerous** filling panels can be **connected** to each other **in a row**. In the case of a higher filling demand, **more** filling panels can be **mounted at a later date** without any problem.

All filling panels are **easy to install**.

### Our range of standard filling panels:

**4 x PN 200 connections**  
with 4 filling hoses or  
4 direct connections.

**4 x PN 300 connections**  
with 4 filling hoses or  
4 direct connections.

**2 x PN 200 connections +  
2 x PN 300 connections**  
with switch over

**2 x PN 200 connections +  
2 x PN 300 connections**  
with pressure reducer



Example: filling panel with 4 filling hoses ( 2 x PN 200, 2 x PN 300 )

Other equipment and versions on request!

### Optional:

#### B-CONTROL

Operating panel for remote compressor control.

#### Switch-over device

The air overflows directly from the storage bank into the high pressure tanks.

If the pressure needs to be topped up, the compressor is automatically switched on to fill the tanks directly.

Only after having reached the required bottle pressure do the storage tanks get refilled.



Example: filling panel with 10 filling hoses ( 4 x PN 200, 6 x PN 300 )

## TECHNICAL DATA

| 1) Model<br>max.<br>330 bar        | Comp.-<br>stages | 2) FAD<br>l/min | RPM<br>min <sup>-1</sup> | 3) Filling<br>time<br>min | Motor |     | Filter system    | 4) Dimensions<br>cm |    |     | Weight<br>net<br>kg |
|------------------------------------|------------------|-----------------|--------------------------|---------------------------|-------|-----|------------------|---------------------|----|-----|---------------------|
|                                    |                  |                 |                          |                           | kW    | HP  |                  | L                   | W  | H   |                     |
| <b>VERTICUS 5 - Range</b> 420 bar  |                  |                 |                          |                           |       |     |                  |                     |    |     |                     |
| V12.14-5.5-5 <sup>4)</sup>         | 4                | 260             | 1185                     | 0,77                      | 5,5   | 7,5 | P61              | 148                 | 83 | 152 | 395                 |
| V12.14-7.5-5 <sup>4)</sup>         | 4                | 320             | 1470                     | 0,63                      | 7,5   | 10  | or               |                     |    |     | 400                 |
| V15.1-7.5-5                        | 4                | 370             | 1050                     | 0,54                      | 7,5   | 10  | P81              |                     |    |     | 430                 |
| V15.1-11-5F                        | 4                | 450             | 1320                     | 0,44                      | 11    | 15  | P41              |                     |    |     | 340                 |
| V15.1-11-5 <sup>4)</sup>           | 4                | 450             | 1320                     | 0,44                      | 11    | 15  | P61<br>or<br>P81 |                     |    |     | 440                 |
| V18.1-11-5                         | 5                | 520             | 1140                     | 0,38                      | 11    | 15  |                  |                     |    |     | 455                 |
| V150-11-5                          | 4                | 540             | 1230                     | 0,37                      | 11    | 15  |                  |                     |    |     | 440                 |
| V18.1-15-5                         | 5                | 600             | 1320                     | 0,33                      | 15    | 20  |                  |                     |    |     | 465                 |
| V180-15-5                          | 4                | 680             | 1400                     | 0,29                      | 15    | 20  |                  |                     |    |     | 455                 |
| <b>KAP - Range</b> 420 bar         |                  |                 |                          |                           |       |     |                  |                     |    |     |                     |
| KAP 12.14-5.5-5 <sup>4)</sup>      | 4                | 260             | 1185                     | 0,77                      | 5,5   | 7,5 | P61              | 114                 | 83 | 152 | 305                 |
| KAP 12.14-7.5-5 <sup>4)</sup>      | 4                | 320             | 1470                     | 0,63                      | 7,5   | 10  | or               |                     |    |     | 310                 |
| KAP 15.1-7.5-5                     | 4                | 370             | 1050                     | 0,54                      | 7,5   | 10  | P81              |                     |    |     | 340                 |
| KAP 15.1-11-5F                     | 4                | 450             | 1320                     | 0,44                      | 11    | 15  | P41              |                     |    |     | 340                 |
| KAP 15.1-11-5 <sup>4)</sup>        | 4                | 450             | 1320                     | 0,44                      | 11    | 15  | P61<br>or<br>P81 |                     |    |     | 350                 |
| KAP18.1-11-5                       | 5                | 520             | 1140                     | 0,38                      | 11    | 15  |                  |                     |    |     | 365                 |
| KAP 150-11-5                       | 4                | 540             | 1230                     | 0,37                      | 11    | 15  |                  |                     |    |     | 350                 |
| KAP18.1-15-5                       | 5                | 600             | 1320                     | 0,33                      | 15    | 20  |                  |                     |    |     | 375                 |
| KAP 180-15-5                       | 4                | 680             | 1400                     | 0,29                      | 15    | 20  |                  |                     |    |     | 365                 |
| <b>KAP H - Range</b>               |                  |                 |                          |                           |       |     |                  |                     |    |     |                     |
| KAP 15.1-11-H                      | 4                | 450             | 1320                     | 0,44                      | 11    | 15  | P61              | 165                 | 78 | 90  | 370                 |
| KAP 150-11-H                       | 4                | 540             | 1230                     | 0,37                      | 11    | 15  | oder             |                     |    |     | 370                 |
| KAP 180-15-H                       | 4                | 680             | 1400                     | 0,29                      | 15    | 20  | P81              |                     |    |     | 850                 |
| <b>KAP - DAH-Range</b>             |                  |                 |                          |                           |       |     |                  |                     |    |     |                     |
| KAP 15.1-14-DAH                    | 4                | 450             | 1320                     | 0,44                      | 14    | 19  | P61              | 165                 | 78 | 90  | 500                 |
| KAP 150-16-DAH                     | 4                | 540             | 1230                     | 0,37                      | 16    | 22  | P61              |                     |    |     | 500                 |
| KAP 180-18-DAH                     | 4                | 680             | 1400                     | 0,29                      | 18    | 24  | P81              |                     |    |     | 516                 |
| <b>KAP - Range -220/23</b> 420 bar |                  |                 |                          |                           |       |     |                  |                     |    |     |                     |
| KAP 220 - 20 E                     | 4                | 650             | 980                      | 0,31                      | 15    | 20  | P80              | 214                 | 72 | 132 | 490                 |
| KAP 220 - 25 E                     | 4                | 800             | 1180                     | 0,25                      | 18,5  | 25  | P80              |                     |    |     | 510                 |
| KAP 220 - 30 E                     | 4                | 950             | 1320                     | 0,21                      | 22    | 30  | P100             |                     |    |     | 570                 |
| KAP 23 - 40 E                      | 4                | 1300            | 1200                     | 0,15                      | 30    | 40  | P120             | 226                 | 87 | 132 | 760                 |
| KAP 23 - 50 E                      | 4                | 1480            | 1400                     | 0,14                      | 37    | 50  | P120             |                     |    |     | 780                 |
| KAP 220 - 30 - 420                 | 4                | 880             | 1180                     | 0,25                      | 22    | 30  | P100-420         | 214                 | 72 | 132 | 570                 |

- 1) also available with switch over device  
330 / 225 bar = HU type
- 2) Cylinder filling from 0 to 200 bar
- 3) Filling rate for 1 l cylinder capacity from 0 to 200 bar
- 4) KAP 220/23 without filter system

