BAUER KOMPRESSOREN

THE G RANGE

Compressor units for rare gases

- **25 – 350 bar**
- **85 – 24.800 l/min**

- FOR HELIUM AND ARGON
- AIR AND WATER-COOLED
- MEDIUM AND HIGH PRESSURE

High-performance complete system solutions for reliably compressing, purifying, storing, distributing and recovering rare gases.

The compressors from BAUER are especially modified for the treatment of rare gases. Filter systems from BAUER provide for a consistently high gas quality.

The B-CONTROL compressor control and an optional noise absorbing construction provide a high degree of user convenience. For special application conditions, BAUER also offers container solutions.

High pressure integrated system technology

Modern industrial processes require maximum operating security, flexible unit configuration and investment security.

- High Pressure System Technology "Made in Germany" enables the customer to recover and reuse rare gases and gas mixtures in an economic way with minimal gas losses.
- BAUER is your one-stop provider of all the products and services you need, from planning and advice to expert commissioning and long-term parts supply over decades.

Helium recovery balloon

Helium recovery unit

Gas balloons for recovery of rare gases

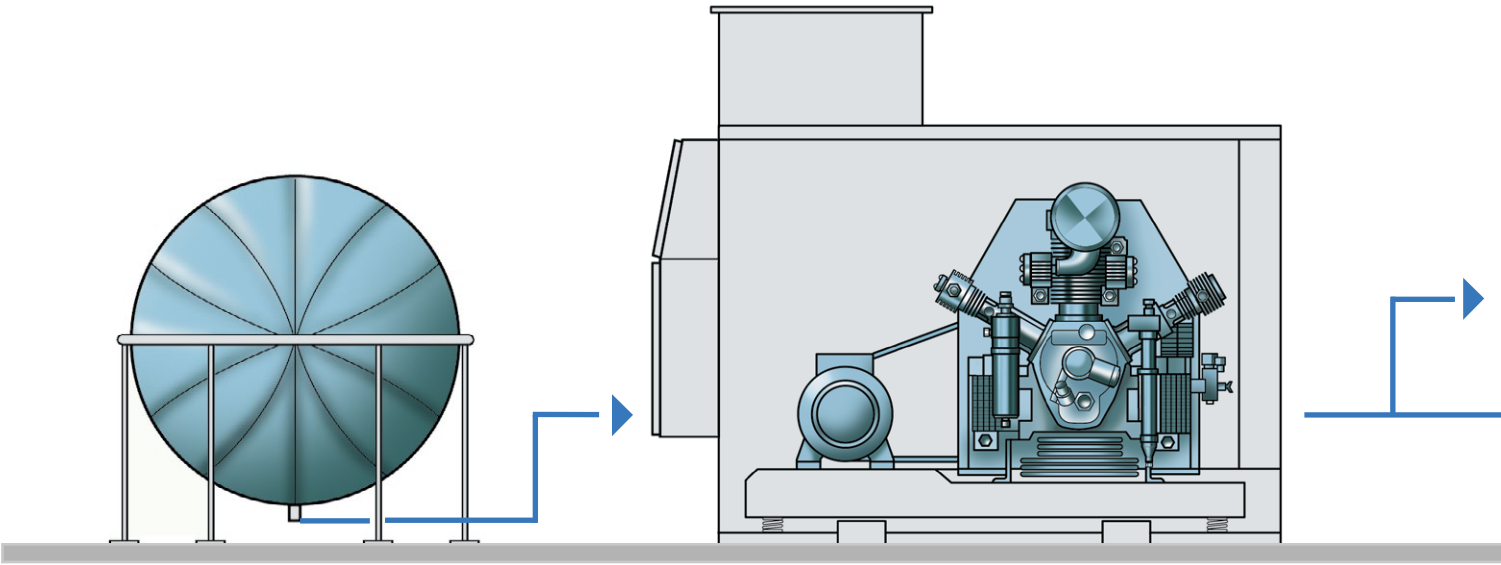
- Available in cylindrical or spherical shape.
- Fully equipped with frame for either ground- or roof-installation.
- Helium-tight execution for gas volumes starting from 1 m^3.
- Level monitoring system for fully automatic compressor control.

Units for compression of rare gases

- Perfectly adapted to the compression of helium & argon.
- Equipped as a standard with the compressor control B-CONTROL.
- The rare gas compressors are tested under real conditions using helium or argon and delivered ready for production/use[1].

[1] a pre-assembled basic version is also available

Final check at BAUER



BAUER KOMPRESSOREN

Systems for purification of rare gases

- **P purification systems**
  Disposable filter cartridge systems for removing residual humidity, solid matter impurities and traces of oil on the high pressure side
  - Replacement of cartridges dependent on the quality of intake gas.
  - Gas-tight version.
  - Gas recovery from safety valves possible.
- **B-KOOL**
  Refrigeration dryer for increased life span of the filter cartridges.
  - Service life increased up to 11-fold.
- **SECCANT regeneration dryer**
  Enables economic continuous use for drying and de-oiling of wet gases.
  - Gas recovery from safety valves and regeneration gas recovery possible.
  - Gas-tight version.
  - Connection of several compressors possible.

Systems for storage of rare gases

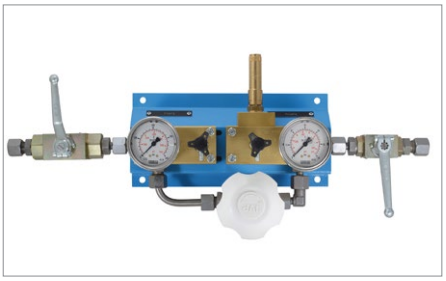
- Storage cylinder systems up to 420 bar, consisting of cylinders with a geometrical volume of 50 or 80 litres, available as single units or as a modular system.
- Vertical or horizontal arrangement.
- Extendable at will.
- Can be implemented to fit any space optimally.

B 2000 storage bank

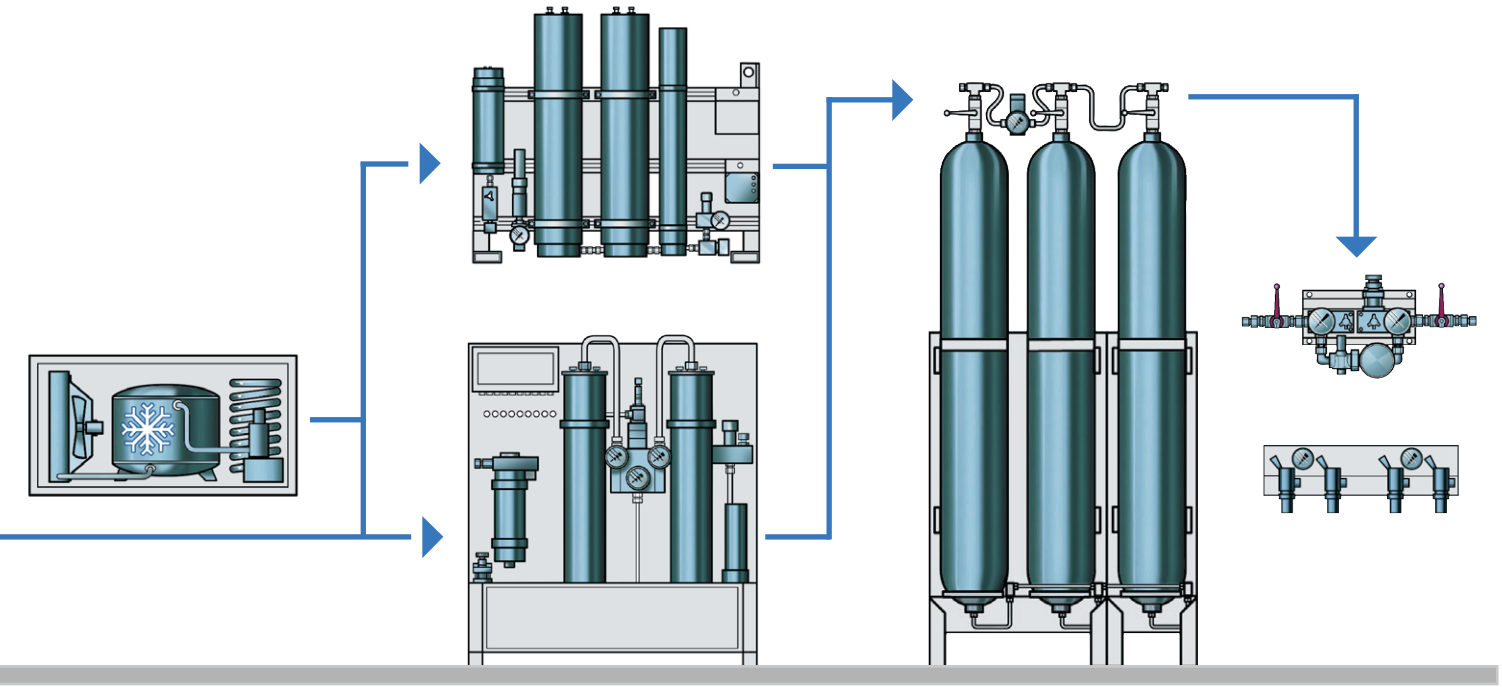
Systems for distribution of rare gases

- High-pressure reducing panels for the constant regulation of outlet pressure.
- Filling panels in numerous standardized versions, also in stainless steel for outdoor installations.

Filling panel on outlet side



High-pressure reducing panel



Compressor technology

Gas compressor systems from BAUER characteristically distinguish themselves through their easy integration and turnkey unit concepts.

FULL CONTROL

Two different compressor controls are available for the BAUER Helium compressors.

B-CONTROL MICRO

- Standard on air-cooled compressors.
- Modern, easy-to-use SPC control.
- Provides for problem-free control of the complete system from the gas balloon to the storage system, as well as connection to external on-off signal transmitters.

Compressor control B-CONTROL MICRO

B-CONTROL II

- Standard on water-cooled compressors.
- The B-CONTROL II is an enhanced version of the basic control B-CONTROL MICRO.
- The menu navigation is made simple and easy to read and use via the colour touchscreen display.
- Standard interfaces such as USB, Ethernet and Modbus are incorporated.
- The integrated function of interconnected operation allows basic load changes or a duty/standby operation of up to four.

ECONOMIC OPERATION

- For particularly economic operation, our units are rigorously optimized for gas tightness.
- Gas from the safety valves is returned to the intake buffer vessel and lost gas from the automatic condensate drain system is returned to the condensate collecting vessel, thus creating a closed system and eliminating gas loss.

OUTSTANDING QUALITY

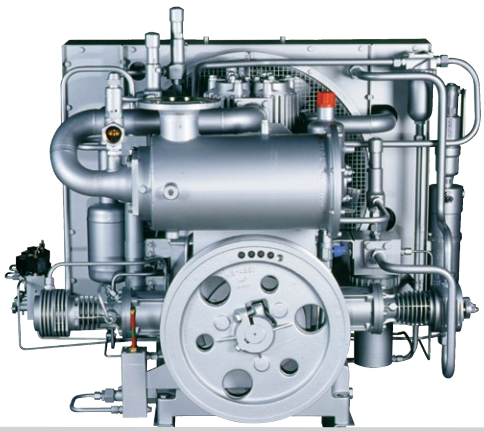
- BAUER ensures maximum quality by extensive quality assurance monitoring during and after production according to the requirements defined in DIN EN ISO 9001.
- Each single compressor block is tested in continuous running and each compressor unit undergoes an extensive functionality and safety test.

SOPHISTICATED SOUND INSULATION

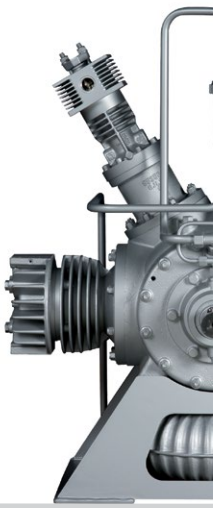
- Compressors with Super Silent enclosure are equipped with a labyrinth system for breaking the airborne noise in order to assure optimal noise reduction.
- The integrated fan ensures a targeted and effective cooling within the unit housing. The transmission of structure-borne noise is effectively reduced by impedance discontinuities.

IK 100/IK 120 Block

IK 15.1/IK 18.1 Block



IK 23 Block



BK 23 Block w

Compressor block technology

Over 65 years of experience in the construction of medium and high pressure systems are the base for the legendary reliability and longevity of BAUER compressor blocks.

EFFICIENT COOLING

AIR-COOLED COMPRESSORS

- The intelligent cooling system with over-sized coolers, combined with large surface area ribbed cylinders, ensure optimum cooling of each compression stage.

WATER-COOLED COMPRESSORS

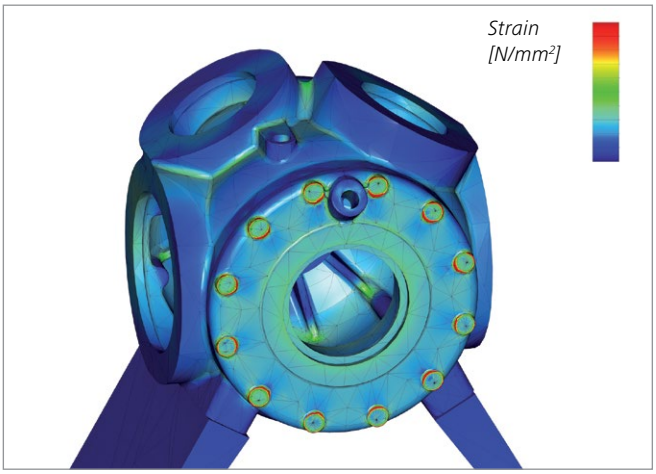
- As a result of targeted water cooling of the interstage and afterstage coolers, and also the valve heads, almost 85 % of the heat produced can be absorbed by the cooling water.
- The stainless steel heat exchanger provides optimum cooling for the compressor, ensuring excellent functionality and long life and maximizing the efficiency of the entire compressor system.

MINIMUM OPERATING COSTS

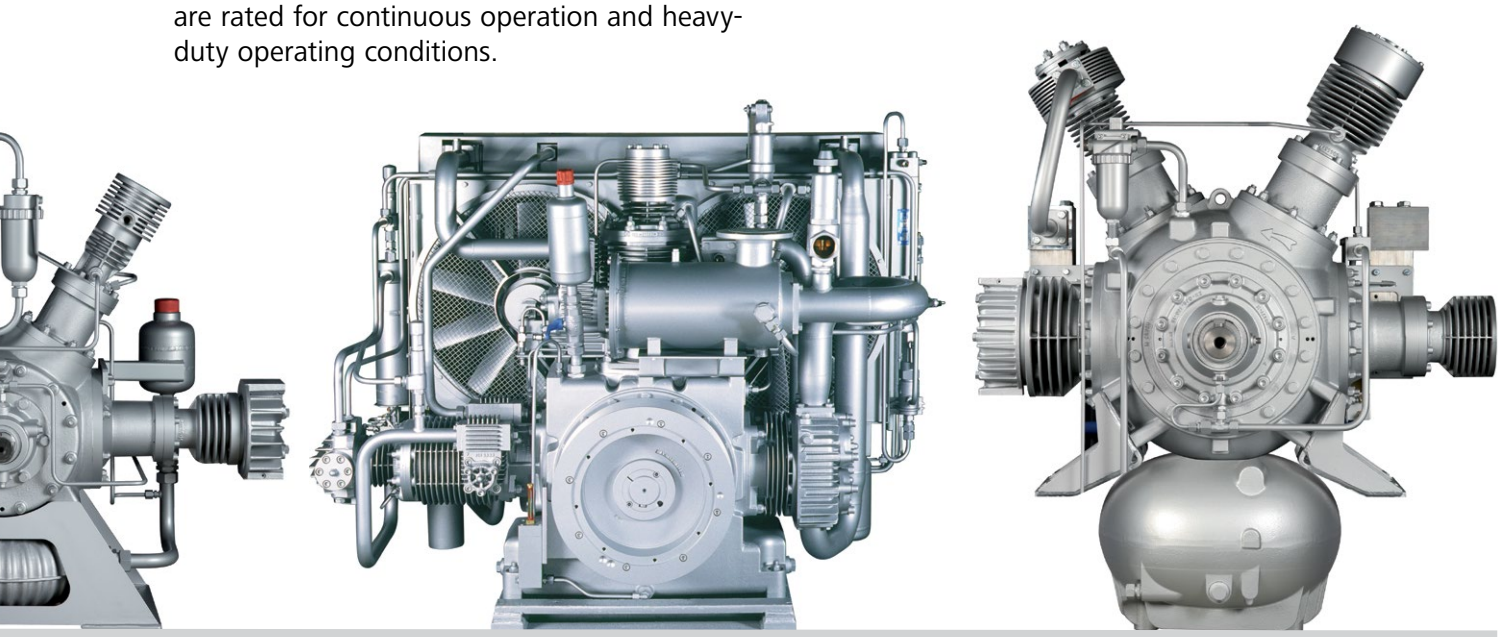
- Long maintenance intervals for valve checking and oil changes keep the operating costs for the unit at a minimum and increase the availability.
- Optimum flow cross-sections and valve locations ensure efficient cylinder filling and minimal cylinder clearance of the unit with low power consumption and high efficiency.
- The extremely robust industrial roller bearings are rated for continuous operation and heavy-duty operating conditions.

FOR RARE GAS

- The pressure-resistant crankcase on the blocks GIB 23 to GIB 52 prevents gas losses by blow-by and at the same time increases the oil tightness.
- The compression ratios in the compressor block are specially optimized for low compression temperatures.
- Compression fittings on the high-pressure side ensure optimum gas tightness.



Bionics serve as a model: Computer optimized crankcase construction (FEM)



vater cooled

IK 25 Block

BK 26 Block water cooled

The air-cooled unit ranges

The air-cooled rare gas compressors from BAUER are specially suited to gases like helium and argon, so that the best possible efficiency is achieved. Gas losses are minimized by returning gas from the safety valves (blowby gas) to the intake buffer vessel, returning lost gas from the automatic condensate drain system to the condensate collecting vessel and enclosing the safety valves in a housing.
The easy-to-use B-CONTROL MICRO controls the complete system including monitoring of intake pressure, final pressure, temperature and the optional saturation of the filter cartridges.

VERTICUS 5, rare gas version, open version

The VERTICUS 5 is a classic from BAUER and is the optimal version for the compression of rare gases.

- An intake buffer vessel and condensate collection vessel are already installed on the combination base frame and plumbed ex factory.
- A V-belt drive uses an electric motor.
- According to customer requirements, the units can be delivered open or in Super Silent design.
- Space-saving integration of a cartridge filter system P61 or P81 into the unit is possible.
- To increase the life span of the filter cartridges, the refrigeration dryer B-KOOL can be installed.
- Vibration-optimized unit concept permits installation without the use of a foundation.

G 25.9-45, open version

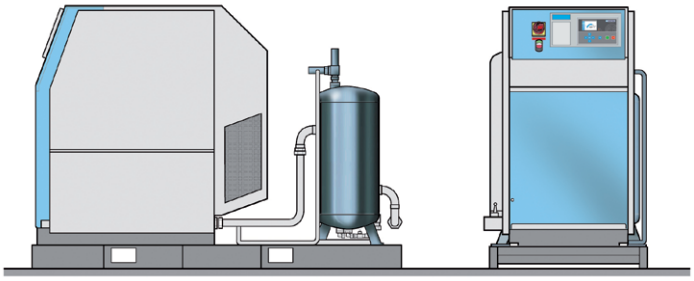
The compressors of the range G 22 to G 25 in horizontal design make an impression with their proven compressor blocks and closed gas circuit.

- Automatic condensate drain device with integrated unloaded start and condensate collecting system.
- Intake buffer and condensate collection vessel for separate installation next to the unit.
- V-belt drive using an electric motor of efficiency class IE 2.
- The compressor is completely mounted ready for use[1] on base frame with anti-vibration rubber-bonded metal shock mounts for installation without the use of a foundation.
- According to customer requirements, the units can be delivered open or in Super Silent design.
- Use of separate air and gas purification systems is possible.

[1] As an option, a basic version is available

Dimensions and configurations

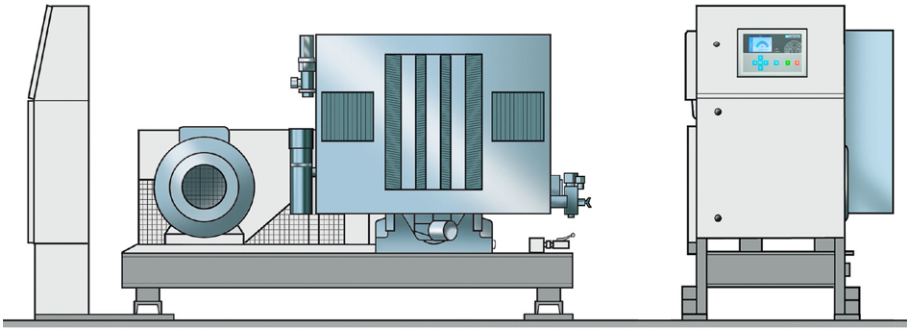
VERTICUS 5 Range,
Dimensions in mm (approx.):
Length: 2350 Width: 1040 Height: 1665



G 22 Range,
Dimensions of the unit in mm (approx.):
Length 2140 Width: 720 Height: 1250

G 23 Range,
Dimensions of the unit in mm (approx.):
Length 2260 Width: 865 Height: 1315

G 25 Range,
Dimensions of the unit in mm (approx.):
Length 3020 Width: 1300 Height: 1525



Technical data

Model	F.A.D [1]			Number of stages	Speed	Motor power	Power consumption[2]	Net weight approx.
	l/min	m³/h	cfm		min⁻¹	kW	kW	kg
VERTICUS 5 Range, 90 to 220 bar / 1300 to 3200 psig								
G 100-3-5	85	5	3	3	900	3	2	535
G 120-4-5	130	8	5	3	900	4	3	540
G 120-5,5-5	175	10,5	6	3	1250	5,5	4	555
G 15.1-7,5-5	300	18	11	4	880	7,5	6	620
G 15.1-11-5	400	24	14	4	1230	11	8	650
G 18.1-15-5	520	31,2	18	5	1470	15	12	670
VERTICUS 5 Range, 220 to 350 bar / 3200 to 5000 psig								
G 15.1-7,5-5	300	18	11	4	880	7,5	6	620
G 15.1-11-5	400	24	14	4	1230	11	9	650
G 18.1-15-5	520	31,2	18	5	1470	15	13	670
G 22 - G 25 Range, 90 to 220 bar / 1300 to 3200 psig								
G 22.0-18.5	720	43	25	4	1050	18,5	14	540
G 23.1-22	840	50	30	4	990	22	16	700
G 23.1-30	1060	64	37	4	1250	30	21	770
G 25.9-45	1900	114	67	5	1180	45	36	1900
G 25 Range, 220 to 350 bar / 3200 to 5000 psig								
G 25.9-45	1650	99	58	5	1050	45	34	1900

[1] Measured acc. to ISO 1217
Values valid for air and nitrogen at 50 Hz
Correction factor helium: FAD air x 0.8
Correction factor argon: FAD air x 0.95
Other gases on request

[2] At max. final pressure
Values valid for air and nitrogen at 50 Hz
Correction factor helium: x 1.06
Correction factor argon: x 1.12

The water-cooled unit range

The water-cooled compressors and boosters are optimally suited for installation under circumstances which do not allow for air-cooling. As a result of the targeted water cooling of the interstage and afterstage cooler, and of the valve heads, approximately 85 percent of the heat produced is absorbed by the cooling water.
Normally, the drive is a direct-coupled or V-belt driven solution in horizontal or vertical design. The B-CONTROL II controls the compressor and, as an option, further components or the complete system.

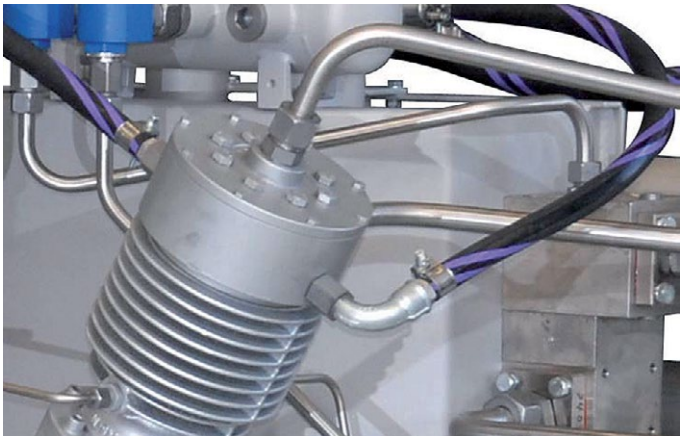
HIGHEST RELIABILITY

- Simple operation, user friendliness and easy maintenance were the top priorities in the development.
- The vibration-free running makes installation without a foundation possible.
- Compression fittings on the high-pressure side ensure optimum gas tightness.

BLOCK TECHNOLOGY

- The pressure-resistant crankcase is provided with a dry sump lubrication for better oil cooling and for inclinations of up to 30°. It is efficient in inhibiting blow-by losses during compression of air and gases with primary pressure.
- A special piston construction minimizes the usual blow-by. Because of the low losses, a very high efficiency is reached.
- For efficient reduction of the operating temperature, some block variants are additionally equipped with water cooling for the valve heads.

GB/GIB 23 rare gas compressor



Water-cooled valve head

FLEXIBLE INSTALLATION

Both the intake buffer / condensate collection vessel and the B-CONTROL II can be installed on site, independently of the compressor unit. This enables optimized installation even in very confined spaces.

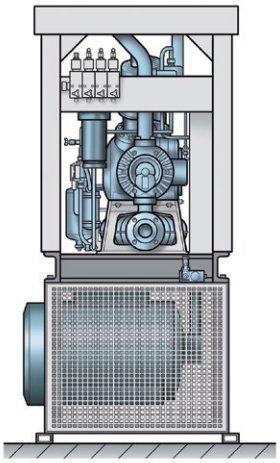
Unit configuration

- The range GB 23/GIB 23 is available in vertical execution with V-belt drive and optionally also with air-cooling.
- The ranges GIB 24, GIB 26 and GIB 52 are direct-coupled.
- Standard use of three-phase motors of the energy efficiency class IE 2.

Dimensions and configurations

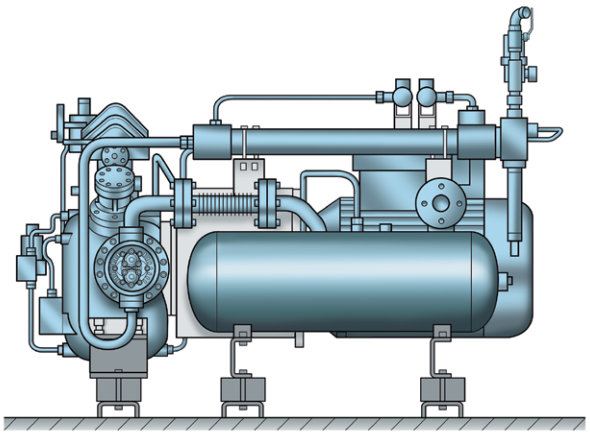
GB 23/GIB 23 range – Vertical design

Dimensions in mm (approx.):
Length: 1360 Width: 875 Heigth: 2040



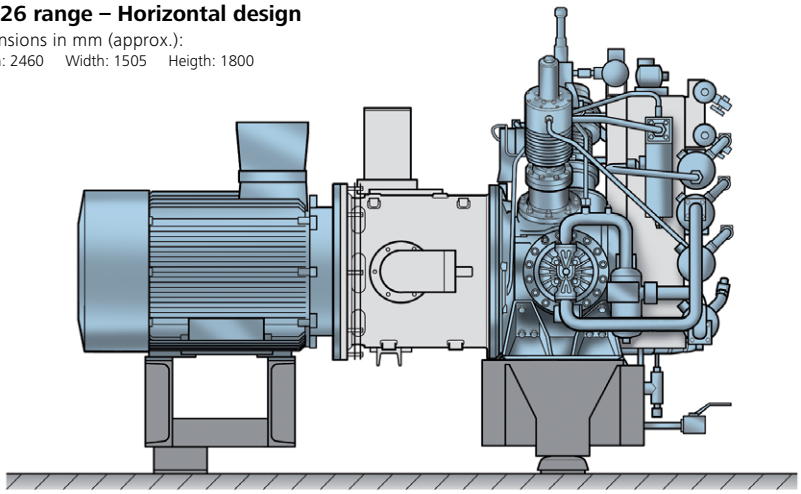
GIB 24 range – Horizontal design

Dimensions in mm (approx.):
Length: 1990 Width: 1470 Heigth: 1380



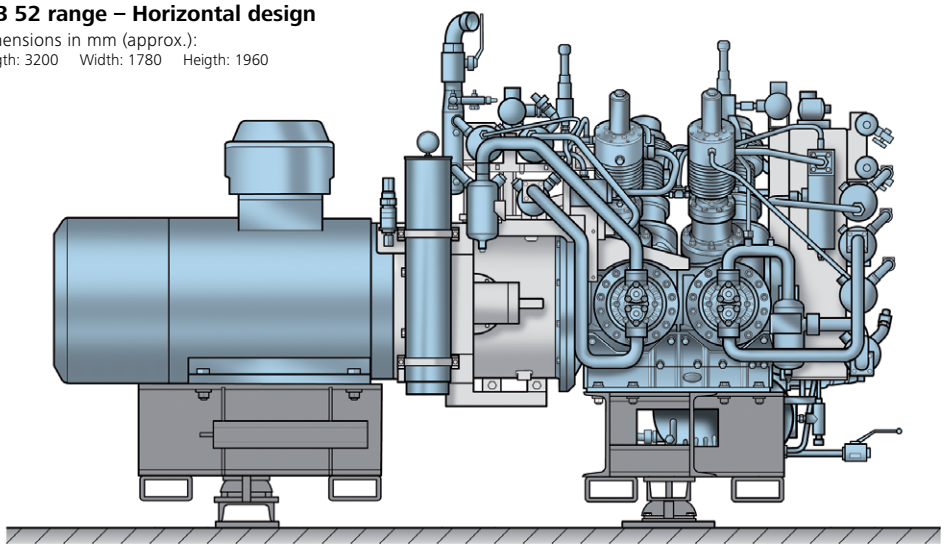
GIB 26 range – Horizontal design

Dimensions in mm (approx.):
Length: 2460 Width: 1505 Heigth: 1800



GIB 52 range – Horizontal design

Dimensions in mm (approx.):
Length: 3200 Width: 1780 Heigth: 1960



Technical data

Model	F.A.D.[1]			Intake pressure	Final pressure		Number of stages	Speed	Motor power	Power consumption [2]	Net weight approx.
					min	max					
	l/min	m³/h	cfm	bar_g	bar	bar		min^{-1}	kW	kW	kg
Compressor, 90 to 220 bar											
GB 23.2-22	920	55,2	32	atm.	90	220	4	1140	22	18	1170
GB 23.2-30	1150	69	41					1420	30	22	
GB 23.2-37	920	55,2	32	atm.				1140	37	30	
	1840	110,4	65	1	150						
Booster, 25 to 100 bar											
GIB 23.8-37	2800	168	99	4	25	40	2	1140	37	20	1170
	3920	235	138	6	30	50				26	
	5050 [3]	303	178	8 [3]	40	63				33	
GIB 23.7-37	2060	124	73	4	25	40	2	1140	37	15	1160
	2900	174	102	6	35	60				21	
	3700	222	131	8	40	80				28	
	4530	272	160	10	50					30	
GIB 24.20-90	9800	588	346	8	40	80	2	1485	90	71	1170
	12000 [3]	720	424	10 [3]	50	100				87	
Booster, 90 to 350 bar											
GIB 23.10-37	1330	80	47	2	90	200	4	1140	37	19	1150
	1780	106	63	3	150	300				26	
	2220	133	78	4	200	350				32	
GIB 23.12-37	1550	93	55	4,5	90	200	4	1140	37	19	1180
	1970	118	70	6	150	300				25	
	2530	152	89	8	200	350				31	
GIB 23.13-37	1970	118	70	8	150	200	4	1140	37	20	1180
	2400	144	85	10		300				26	
	2850	171	101	12	200	350				31	
GIB 24.11-75	2200	132	78	1	90	200	4	1485	75	35	1660
	3200	192	113	2	150	300				51	
	4200	252	148	3		350				64	
GIB 24.12-75	2500	150	88	4	120	300	4	1485	75	35	1660
	3500	210	124	6	150	350				46	
	4500	270	159	8	200					55	
	5500	330	194	10	220					63	

Technical data

Model	F.A.D.[1]			Intake pressure	Final pressure		Number of stages	Speed	Motor power	Power consumption [2]	Net weight approx.
					min	max					
	l/min	m³/h	cfm	bar_g	bar	bar		min^{-1}	kW	kW	kg
Booster, 90 to 350 bar											
GIB 24.13-55	2480	149	88	8	150	350	4	1485	55	31	1500
	3300	198	117	11						37	
	4140	248	146	14	200					43	
	4700	282	166	16	250					47	
GIB 26.10-132	4900	294	173	2	90	200	4	1485	132	71	3350
	6700	402	237	3	150	350				103	
	8500 [3]	510	300	4 [3]	200					123	
GIB 26.12-132	5500	333	196	4,5	90	250	4	1485	132	72	3350
	7000	420	247	6	150	350				96	
	9000	540	318	8	200					110	
	10200	612	360	10						117	
GIB 26.13 -132	8050	483	284	10	150	350	4	1485	132	90	3350
	9500	570	335	12						104	
	11000	660	388	14	200					116	
	11700 [3]	702	413	15 [3]	250					121	
GIB 52.10-315	9800	588	346	2	90	200	4	1485	315	142	4800
	13400	804	473	3	150	350				206	
	17000	1020	600	4	200					246	
	18800	1128	664	4,5						262	
GIB 52.12-250	11100	666	392	4,5	90	250	4	1485	250	132	4330
	14000	840	484	6	150	350				172	
	18000	1080	636	8	200					220	
	20400 [3]	1224	720	10 [3]						234	
GIB 52.13-250	16100	966	569	10	150	350	4	1485	250	180	4330
	19000	1140	671	12						212	
	22000 [3]	1320	777	14 [3]	200					233	
6Booster, 200 to 420 bar											
GIB 26.5-132	6500	390	230	6	200	420	4	1485	132	90	4330
	8300	498	293	8	250					107	
	9200	552	325	9						115	

[1] Measured acc. to ISO 1217
Values valid for air and nitrogen at 50 Hz
Correction factor helium: FAD air x 0.8
Correction factor argon: FAD air x 0.95
Other gases on request

[2] At max. final pressure
Values valid for air and nitrogen at 50 Hz
Correction factor helium: × 1,06
Correction factor argon: × 1,12

[3] Compression of argon not possible at this delivery volume

Our accessories programme for rare gas compression units

Mixed gas systems

For a multitude of applications, lower helium concentrations suffice. BAUER offers standardized complete systems which can be flexibly adapted for mixing helium, air and other gases, enabling considerable cost savings.

- In the gas mixer, different gases are mixed together in the required concentrations and stored in an intake buffer vessel.
- Dew point sensors measure the humidity, oxygen sensors the oxygen proportion within the gas and report the data to the B-CONTROL compressor control.
- If required, the systems can be provided as closed circuits with recovery allowing for still greater savings.

Gas mixer

Container and concrete building solutions

(In addition to indoor solutions) Bauer also supplies outdoor systems tailored to local climatic conditions and areas of application.

- For example, container solutions for mobile use are possible.
- Concrete buildings are suited for stationary installations.
- The installation contains the compressor with compressor control and air or water cooling, optional air/gas purification, storage systems, gas mixing system and other components.

Concrete building with incorporated helium compressor with water-cooling

BAUER KOMPRESSOREN GmbH
Postfach 710260 | 81452 München
Tel. +49 (0) 89 / 780 49 - 0
Fax +49 (0) 89 / 780 49 - 167
industrie@bauer-kompressoren.de
www.bauer-kompressoren.de

THE G RANGE EN
N33024
03.14
Subject to technical modifications