HIGH PRESSURE COMPRESSORS
For Natural Gas Vehicle Refueling
MISSION STATEMENT
Our mission at BAUER COMPRES-SORS INC. is to provide the highest quality products and solutions for high pressure air and gas, geared towards industrial and breathing air applications. We are committed to use the latest technology, best materials, most qualified human resources and the most efficient fabrication techniques. As a result, our equipment solutions offer superior performance along with best value, which are delivered on time, defect free and are supported to achieve their maximum potential throughout their entire lifecycle.
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INTRODUCTION

SYSTEMS

NEW BAUER C52 HIGH CAPACITY WATERCOOLED COMPRESSOR

HISTORY - Trusted Industry Leader for Over 60 Years

For the past 60 years, BAUER compressors have stood the test of time for the highest level of performance, quality, safety and innovation. All BAUER compressors are designed and manufactured in-house with complete control of every step to ensure that BAUER’s uncompromising standards for ultimate performance, unmatched reliability, highest durability and lowest cost of ownership are met. At BAUER we are well known for our high tech precision manufacturing and quality process, resulting in products which outperform and outlast any other compressor brand on the market today.

INNOVATION - Ultimate Performance and Reliability

At BAUER, we are committed to provide our customers with the most technologically advanced products in the world. Only the latest CAD and finite element calculation programs are used in the design of each product. To maintain our technological edge, BAUER reinvests a large portion of corporate earnings back into R&D. Simultaneously, we draw on our more than a century of machine building heritage to advance our causes for the future. The result: Products which are built to attain the highest standards of performance and reliability.
QUALITY - Lowest Cost of Ownership

At BAUER, our world renowned quality is a result of being vertically integrated. We maintain control of the entire production process, starting from R&D, to engineering & design, to manufacturing & assembly. Only the highest grade materials and state of the art precision manufacturing methods are used in the making of each compressor. To ensure consistent quality throughout, our entire manufacturing process from the compressor to complete system is ISO9001 certified. Every unit is put through rigorous testing by our QC department before release from our factory for shipping. The result: A highly reliable product which keeps on performing with minimal cost of ownership.

BAUER compressors are rated for continuous duty and 30,000 hours with a warranty of five years and lifecycle support of up to 40 years.
Since the beginning of the 1970’s, BAUER has been manufacturing systems solutions for filling vehicles running on Compressed Natural Gas (CNG). There are currently over 1,400 BAUER CNG compressor systems in operation worldwide. Each BAUER CNG system is built with the same level of innovation and quality as the BAUER compressor at the heart of the system.

RANGE AND FLEXIBILITY - From Compression to Turnkey CNG Fueling System for Any Size Fleet

At BAUER we offer our customers complete flexibility. Our product offering ranges from simple compression systems all the way to complete turnkey systems with storage, priority, sequencing, drying purification as well as dispensing. Our customers have the option to choose from a number of pre-engineered systems designed for maximum value and shorter lead times with a wide performance range to accommodate any size fleet. For special customer needs, we also offer customized CNG solutions.
SAFETY - Built Into Every System
With over 40 years of CNG experience, safety is an integral part of the design of all BAUER CNG systems. All components are built to the latest edition of the NFPA 52 code and all critical control points such as temperatures, pressures and electrical loads are continuously monitored throughout the process to ensure safe and reliable operation of the compression system.

BEST WARRANTY IN THE INDUSTRY
We are so confident of our quality, that the Micro - L-Series are warrantied for two years and our X-Fill is warrantied for five years (with maintenance agreement) for both parts and labor. In addition, we guarantee that all compressors are supported with spare parts for 40 years. This level of support is unmatched in the industry.

24/7 CUSTOMER SUPPORT
All BAUER CNG systems are supported by a nationwide network of BAUER factory trained technicians. We are available 24/7 for technical and spare parts support. We also offer remote monitoring of your BAUER CNG system for early problem detection and ensuring the highest level of uptime and reliability for years to come.
Compressor Solutions for Natural Gas

C120
› up to 9 cfm
Compact Series
Air Cooled Compressor
V-Belt Drive

C15 Series
› up to 27 cfm
Compact Series
Air Cooled Compressor
V-Belt Drive

C22.0
› up to 40 cfm
Compact Series
Air Cooled Compressor
V-Belt Drive

C23.1
› up to 50 cfm
Workhorse Air Cooled Compressor
V-Belt Drive

C23 Series
› 65 to 145 cfm
Versatile State-of-the-Art Air or Water Cooled Compressor / Suitable for High Inlet Pressure
V-Belt Drive

C25.0/C28.0
› up to 150 cfm
Workhorse Air Cooled Compressor
V-Belt Drive

C26 Series
› up to 350 cfm
Latest State-of-the-Art High Capacity Water Cooled Compressor / Suitable for High Inlet Pressure
Direct or V-belt Drive

C25 Series
› 40 to 70 cfm
Compact Series
Air Cooled Compressor
V-Belt Drive

C52 Series
› up to 700 cfm
Latest State-of-the-Art High Capacity Water Cooled Compressor
Suitable for High Inlet Pressure
Direct Drive
NATURAL GAS

Supplied to millions of businesses throughout the U.S. upon demand; one of the most efficient, cost-effective, environmental friendly and domestically-abundant fuels available.

Natural gas as a viable alternative vehicular fuel is completely compatible with today’s engines. Manufacturers are now producing a variety of factory-equipped, on-road and in-plant vehicles to run cleanly and efficiently on natural gas. In addition, some existing vehicles can also be converted to operate on either natural gas or gasoline (bi-fuel), without compromising performance, at the flip of a switch. Power delivery between the two fuels is virtually indistinguishable.

The actual costs of refueling with natural gas over other fuels can also be a pleasant surprise. The price of natural gas is usually between one-half and three-quarters the cost of its gasoline equivalent. This can result in substantial savings for commercial vehicles of high-mileage commuters. It should also be noted that natural gas prices have a history of being relatively stable, not fluctuating with daily supply and demand like gasoline. Whether vehicles are equipped for natural-gas-only or bi-fuel operation, both time and money can be saved through the use of the convenient, safe and accessible Natural Gas.

Natural Gas is nature’s cleanest burning fossil fuel. When used to power a vehicle engine, it emits fewer pollutants than conventional or other alternative fuels and meets government clean air requirements. Compared to gasoline or diesel, natural gas burns more completely and cleanly, which results in significant reductions in pollution-causing exhaust components such as carbon monoxide, nitrogen oxides and reactive hydrocarbons. Soot, smoke particles and irritating odors are virtually eliminated, making natural gas an ideal choice for fleets. Using clean burning natural gas reduces our dependence on foreign oil.
Our Product Range

**C120 MICRO SERIES** [3.2 - 4.5 GGE / hr (6.3 - 9 CFM)]

**C15/C22 COMPACT SERIES** [8 - 40 GGE / hr (16 - 80 CFM)]

**C23 M-SERIES** [33 - 75 GGE / hr (65 - 150 CFM)]

**C23 CLASSIC SERIES** [25 - 50 GGE / hr (50 - 100 CFM)]

**C25/C28 L-SERIES** [38 - 75 GGE / hr (75 - 150 CFM)]

**C26 X-FILL SERIES** [75 - 178 GGE / hr (150 - 355 CFM)]
DRYING
To ensure pure gas, free of moisture, BAUER offers complete solutions for natural gas drying. A typical configuration consists of a low pressure gas inlet drying system which strips the incoming gas of moisture before compression. BAUER also offers high pressure dryers which perform the same function after compression.
STORAGE FOR FAST FILL

BAUER offers a variety of storage configurations depending on your fill requirements. A typical fast fill system consists of an array of ASME high pressure vessels (tube or cylindrical) arranged in a low, mid and high bank configuration. The charging and discharging of the banks is controlled through the priority and sequencing controls.

PRIORITY AND SEQUENCING CONTROLS

BAUER Priority Controls determine the filling sequence of each storage bank by the compressor based on the actual real-time pressure (gas fill level) in each bank. The Priority Control algorithm is embedded in the PLC of the compression system.

Sequencing Controls determine the discharging sequence of the system’s low, mid and high storage banks based on the real-time demand from the vehicles. The Sequencing Controls optimize vehicle fill time based on the actual pressure (fill level) of the vehicle storage vessels and available pressure (fill level) in each storage bank. The Sequencing algorithm is typically embedded in the gas dispensing system.

DISPENSERS AND FILL POSTS

BAUER offers a complete line of leading brand CNG filling systems. From simple filling posts for private fleets, to sophisticated dispensers with credit card access for public access stations, we can accommodate any customer need.
QUALITY
All BAUER compressors are built in Germany at Bauer’s state-of-the-art facility near Munich. The facility is a tribute to high quality German manufacturing using both highly experienced skilled machinists as well as the latest automated CNC machining equipment. Every compressor must pass a rigorous performance test under real life conditions before it is allowed for shipping.

For the past 35 years, the BAUER Norfolk Virginia facility has been dedicated to building the highest quality Compression Systems for various applications from Breathing Air Systems to a wide variety of Industrial Systems to CNG Systems for compressing and filling natural gas for vehicle fueling. Like its German counterpart, the BAUER
Norfolk facility utilizes the latest in sophisticated manufacturing methods. To ensure precision, repeatability, scale and quality, the manufacturing process is highly automated utilizing and array of laser cutters, robotic brakes, robotic welders and CNC high pressure tube benders. Assembly is performed through highly experienced and skilled workers. And, in accordance with BAUER’s high quality standards, all systems are performance tested under real-life conditions before shipping to the customer.

Both BAUER’s Compressor Factory in Germany and BAUER’s Systems Factory in Norfolk, VA are ISO9001 certified.

SUPPORT
At BAUER we view World-Class Customer Support as an essential part of our business. From 24-hour service availability to extremely long product support life cycles (up to 40 years) we stand behind our customers for as long as they own their equipment.

- We offer live Help Desk Support from Norfolk, VA to assist our customers with technical questions and help them diagnose problems quickly over the phone.
- We offer a team of highly skilled factory-trained technicians for onsite installations and technical support at our customers’ facility.
- We offer remote diagnostics to for early detection of problems and remote diagnosis as well as troubleshooting.
- We offer a variety of factory, onsite and remote, computer-based training courses to keep our customers competent in operating, maintaining and troubleshooting their equipment.
- We offer our customers an online portal into our customer intranet which is designed to provide access to technical information, expert databases, machine manuals as well as sharing and exchanging information regarding their BAUER compression system.

In summary, at BAUER we are committed to provide our customers with a world-class customer service experience. We will do whatever it takes to make sure that our customers get what they need whenever they need it.
Worldwide

BAUER OFFICES
NORFOLK, VA (USA Main Office)
DALLAS, TX
MIAMI, FL
DETROIT, MI
SAN FRANCISCO, CA
LOS ANGELES, CA
COLOMBIA
CHILE
BRAZIL
GERMANY
AUSTRIA
FRANCE
ITALY
UNITED KINGDOM
JAPAN
SINGAPORE
CHINA
EGYPT
INDIA
AUSTRALIA
RUSSIA
QUESTIONNAIRE
Please complete as much of the information as possible so that we can size the compressor and/or storage system along with the appropriate ancillary equipment.

Information
Customer: ________________________________  Attention: ________________________________
Street: ________________________________  City / State / Country: ________________________________
Phone: ________________________________  Mobile: ________________________________
Fax: ________________________________  e-mail: ________________________________
Date needed by: ________________________________  Potential order date: ________________________________
Application: ________________________________

Gas Quality
1 What is the pipeline pressure of the gas at the site (psig)? ________________________________
2 Is the gas pipeline quality and does it meet the requirements of NFPA 52? ________________________________
3 What is the moisture content of the gas (lbs / MMscf)? ________________________________

Power
1 What is the preferred prime mover, electric motor or natural gas engine? ________________________________
2 Specify the electrical classification for the site (e.g. Class 1, Group D, Division 1 or Division 2). ________________________________
3 Specify the electrical service(s) available at the site (volts/phase/hertz). ________________________________
   Note, for natural gas engine drive 120/1/60 is required.
Fleet Information

1. How many NGVs are to be refueled? _______________ What is the fill pressure(s) (psig)? _______________
2. How many are to be slow filled?_______________ How many are to be fast filled? _______________
3. What is the NGVs stored gas volume or water volume or GGE (scf or scf w.v. or GGE)? ___________________________
   Note, 125 scf is equivalent to one gallon of gasoline; 140 scf is equivalent to one gallon of diesel.
4. Describe the fleet, e.g. cars / pickups / vans / forklifts / buses, etc. __________________________
5. What is the average daily fuel usage for each NGV or the average daily mileage for each NGV or the average daily run time for each NGV (e.g. forklift)? __________________________
6. What is the typical fuel efficiency for the NGVs (mpg or gallons per hour for forklifts)? _______________
7. Will the station be for public or private access? __________________________
8. How many days per week is the fleet in service? ______ How many hours per day is the fleet in service? ______
9. Specify the peak demand period(s) and how many NGVs refuel during each peak demand period. __________________________

Station requirements

1. Is there a requirement for a redundant compressor?  ☐ yes  ☐ no
   If yes, is 50% or 100% redundancy preferred? __________________________
2. What is the ambient temperature range at the site (°F min - °F max)? __________________________
3. Is an enclosure required?  ☐ yes  ☐ no  Noise level requirement (dBA)? __________________________
4. How many fast fill hose drops are required? __________________________
5. Is mass flow metering required for fast fill? __________________________
6. What type of dispenser is required for fast fill, fill post or electronic (metered) dispenser? __________________________
7. How many slow fill hose drops are required? __________________________
8. Is mass flow metering required for slow fill? __________________________
9. Is fuel management required? __________________________ Do you have a fuel management system existing? ______
10. Please provide any other information about the fleet or site that may assist us in our evaluation. __________________________

In addition to answering these questions, we urge the purchaser and/or user to become familiar with the latest addition of NFPA 52 and to contact the local gas utility and the local authority having jurisdiction (AHJ) before writing a specification or purchasing equipment. Contact BAUER for assistance.