



ENERGY EFFICIENT SOLUTIONS



Over 100,000 compressed air users expect more when it comes to their compressed air supply.

BOGE air provides them with the air to work.

With energy accounting for up to 75 percent of the lifetime costs of compressed air generation it is not only ecologically important to use energy as efficiently as possible, but also economically important. Thankfully, it does not require much effort for compressed air users to save up to 33 percent of their compressed air related energy costs. The BOGE efficiency program pays off for both the environment and your budget – our energy efficiency specialists will be happy to advise you!

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Compressed air users deserve energy efficient solutions.

Our energy efficiency specialists will be pleased to help you!

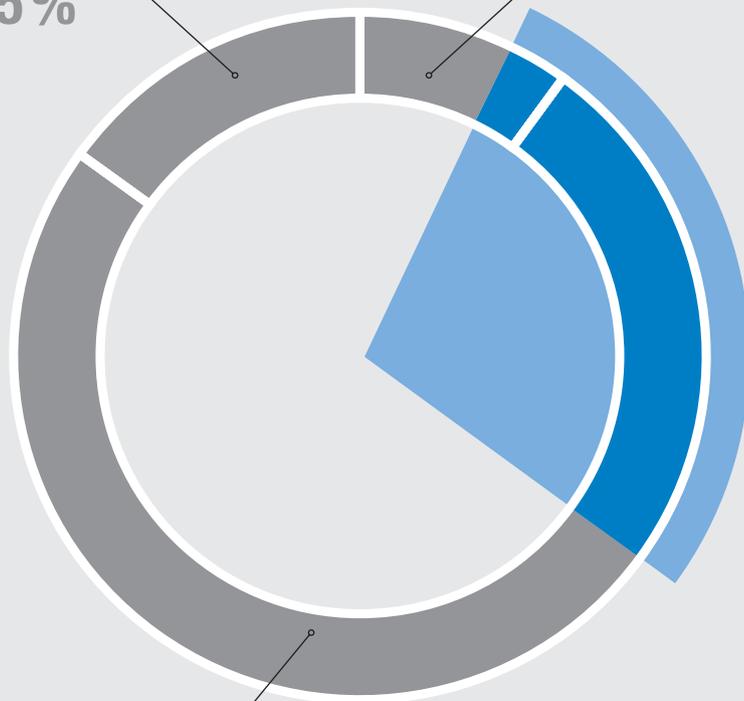
THE SUCCESS OF YOUR INVESTMENT GOES TO THE BOTTOM LINE: WHY ENERGY EFFICIENT COMPRESSED AIR SYSTEMS ARE SO IMPORTANT.

It is estimated that energy costs account for up to 75 percent of the lifetime costs of compressed air generation. This makes energy optimisation essential for any compressed air

user. Saving potentials of more than a third speaks for itself. Do not hesitate to contact your BOGE energy efficiency specialist to discover how much you could be saving!

investment costs
approx. 15%

maintenance and servicing costs
approx. 10%



energy costs
approx. 75%

Your BOGE Advantage:
More than a third of possible savings from energy and maintenance costs are generated by using high quality energy efficient components.

To all those who must work more efficiently than ever: Energy costs have become a key concern for every business. Developing energy efficient solutions has therefore become a top priority at BOGE. Our energy efficiency experts are on hand to provide you with detailed advice on how you can optimise your compressed air system and reduce your associated energy costs.

THE BOGE ADVANTAGE



PROFESSIONAL ADVICE

BOGE provides detailed planning and advice prior to implementing a new compressed air system. Based on your compressed air demand and individual on-site conditions, our energy efficiency specialists will do their utmost to create a customised solution enabling you to produce your compressed air in the most reliable and energy efficient way. Choosing the right type of compressor and an adequate air treatment system will help you avoid not only undue investment but also unnecessary follow-up costs. You should bear in mind that an incorrectly specified compressor station may easily run into thousands of Euros of unnecessary cost. Needless to say, after installation of your compressed air system, our optimising support service will be at your disposal. With our professional auditing tools we will make sure that your installation operates energy efficiently.



EFFICIENT COMPRESSED AIR SYSTEMS

From the development stage, BOGE compressed air systems are engineered for maximum efficiency. One key feature of every BOGE compressor is the compact design that serves to minimise flow losses inside the compressor station. With our screw compressors high quality air ends guarantee maximum output with low specific power consumption. Our piston compressors are often ideal for low volume intermittent operation whereas large screw compressors provide the optimal solution for high volumes of compressed air under continuous load conditions. Furthermore, state-of-the-art controllers along with frequency controlled drives provide energy efficient solutions by adapting the performance of the compressors exactly to the demand. Finally, a comprehensive range of genuine BOGE spare and wear parts have the manufacturer's technological edge to provide long-term security and efficiency.



TRAINING COURSES

The basics of energy efficient compressed air operation are easy to learn. BOGE has developed an energy focused training course for compressed air users that deals with the energy efficient implementation of BOGE compressed air system. Qualified BOGE compressed air experts explain how to ensure optimal functioning of a compressor station in daily operation. On request, an examination can be offered at the end of the course. Successful participants receive a certificate of competence as a compressed air professional. Our professionally trained employees are therefore competent to run the entire management of your compressed air system. This is ideal when you want to independently guarantee the economical operation of your installation.

Energy Efficient compressed air need not be left to chance: BOGE Energy Efficient Solutions.



BOGE AIRReport: THE ENERGY EFFICIENCY CHECK-UP FOR YOUR COMPRESSED AIR SYSTEM

A compressed air station will only work energy efficiently when the complete system is optimised and harmonised.

The AIRReport system check helps to detect weak points by monitoring the compressed air system over set periods of time (e.g. a week).

The crucial factor in measuring the efficiency of a compressor station is its energy consumption. The AIRReport data will enable you to benchmark the actual energy consumption kW/m^3 thus providing an on-going illustration of efficiency of the system. AIRReport is also a tool to detect and to subsequently remedy any compressed air losses due to leakages, system pressure drops, as well as an unduly high peak pressure.

The AIRReport will therefore provide sufficient data to enable you, with the assistance of our energy efficiency experts, to set up the ideal compressor combination and the most efficient configuration of your system – with "air according to demand" for any type of application!



BOGE AIR AUDITS: ENERGY SAVING MADE EASY

Detailed inspection of your compressed air system at regular intervals is the first step to improve your energy efficiency. The BOGE Air Audit serves to analyse and assess all aspects including the generation, treatment and distribution of compressed air as well as process control. This neither requires a great deal of investment nor necessitates extensive measures to be taken: The BOGE experts take care of this, and in many cases low cost or no cost actions can be taken without any hassle – resulting in sustainable energy savings.



The AIRReport measures the efficiency of your compressor station and detects energy savings potential.

The following tests can be carried out within an Air Audit:

- **Consumption measurement**
for assessment of air demand
- **Dew point control**
for a permanent quality assurance
- **Vibration control**
for avoiding expensive standstill times
- **Leakage measurement**
for an effective cost reduction
- **Sound measurement**
for minimising the sound level
- **Oil check**
for a quick and favourable quality check
- **TAN check**
for determination of the compressor oil TAN value by means of a shake test

BOGE COMPRESSOR STATION SIMULATION: EFFICIENT COMPRESSED AIR RIGHT FROM THE START

From the initial planning phase of your BOGE compressed air station, the main focus is on achieving optimum energy efficiency. Our experts use a simulation tool that enables them to calculate the system efficiency during the design phase of the planned compressor station. Comparing different design options provides concrete data to validate the final compressed air system selection and ensure you have efficient compressed air right from the start!

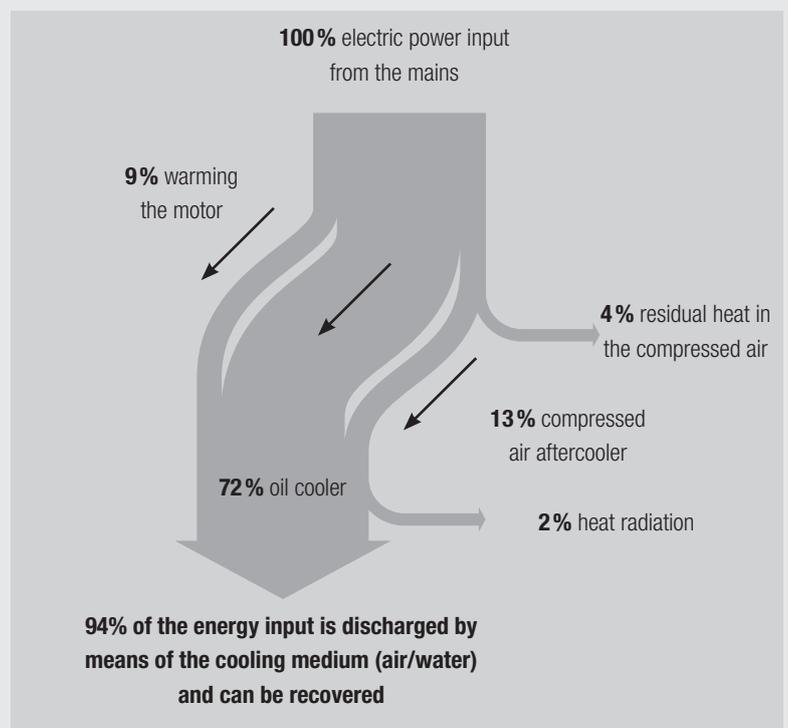
Optimise your energy usage: There are plenty of ways to save energy within your compressed air system – and almost as many alternative ways to waste energy! BOGE offers you reliable auditing tools allowing you to identify opportunities within your installation where energy savings can be made.

Also because a large percentage of the energy used in compression is rejected in the form of heat, we have successfully developed effective systems for waste heat recovery – further key energy saving products.

HIGHLY RECOMMENDED: BOGE WASTE HEAT RECOVERY

Heat is not a waste product but valuable energy:

The largest part of the energy input into compressed air generation is rejected in the form of heat and discharged by means of a cooling medium (air/water). This cooling medium contains approximately 94 percent of the input electrical energy. This heat need not be wasted and can be used, for example, in space heating or for the heating of domestic water. Up to 85 percent of the used energy can be recovered. Please contact our energy experts for further advice!



USE AS SPACE HEATING

In order to be able to use the waste heat from a central compressor station, ducting can be used to transport the heated cooling air to an area that needs to be heated. Typically BOGE screw compressors are silenced and equipped with an internal fan. Connection to a ducting system will therefore pose no problems. Non-enclosed compressors can be retrofitted with a suitable noise reducing cover in order to utilise the waste heat.

USE AS DOMESTIC WATER HEATING

Water can be heated up to a temperature of approximately 70°C by means of a heat exchanger. The warm water generated can then be used as domestic water or to supplement the central heating system. With its Duotherm heat exchangers BOGE is in a position to offer an efficient and dependable water heating system for cooling oil injected screw compressors. They are integrated in the main flow of the hot oil in the compressor. Approximately 75 percent of the input electric power can be recovered into utilisable heat. BOGE has a range of versatile heat exchange systems on offer: Do not hesitate to contact us. Your enquiries are welcome!

For four generations, customers from mechanical engineering, industry and trade have relied on BOGE know-how when it comes to planning, developing and manufacturing compressed air systems. They are fully aware of the fact that BOGE AIR is more than just ordinary compressed air: utmost safety, outstanding efficiency, excellent quality, maximised flexibility along with dependable service are the ingredients to transform BOGE AIR into air to work with – in Germany, in Europe and in more than 80 countries around the world.

Our ranges of services include the following:

- Energy efficient systems development
- Plant design and engineering
- System control and visualisation
- Oil-free piston and screw compressors
- Oil injected screw compressors
and oil lubricated piston compressors
- Compressed air treatment
- Compressed air distribution and storage
- Compressed air accessories
- Compressed air service



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