

# forum. boge

**BOGE AIR. THE AIR TO WORK.**



2010 has seen a dramatic recovery from the 2009 recession and current business levels for BOGE worldwide now exceed pre-recession levels of 2008. BOGE continues to develop itself on a global platform with the recent establishment of new Daughter Companies in India and Australia as well as staff developments in both the Austrian and Mexican markets.

Creating energy efficiencies for our customers remains a key component in the design and development of all products and services from BOGE. It is never too late to optimise your energy usage! In this issue of the Forum we look at what the first steps are in

moving towards creating sustainable compressed air energy savings starting with undergoing a comprehensive audit. See page 3.

You will also find a round up all the latest Company news and BOGE product developments in this edition.

This includes the launch of the extended C series range of screw compressors up to 22 kW. These new models have already set new industry standards in specific power and sound pressure levels. See below for more information.

We also review the innovative K series

oil free piston compressor range which has recently been extended and introduce the new generation oil free screw compressors (both page 4).

Geoff Taylor  
International Sales Director

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## Setting the standard

**BOGE has recently extended the popular C series range of screw compressors up to 22 kW. The C 15 to C 30 provide a quiet, compact and efficient compressed air solution to the medium sized compressed air user, setting new industry standards in specific power and sound pressure levels.**

The extended BOGE C series range has been engineered to generate high free air deliveries in continuous operation and in an incomparably efficient manner. For maximum operating dependability and efficiency all essential components have been integrated into the compact module. This serves to eliminate pipework and to reduce flow losses.

BOGE has set new industry standards with these C series models in terms of low sound pressure levels – from 63-69 dB(A) – making them very quiet in operation as well as offering increased compressed air outputs.

The new models are also very energy efficient with the specific real demand for energy ranging from just 7.08 – 7.16 kW/m<sup>3</sup>/min (according to ISO1217 AnexC/PN2 CPT2).

Due to its compact design space requirements are kept to a minimum. An installation surface of less than 1 square metre is sufficient.

For the ultimate energy efficient solution a heat recovery system can be added to the new C series models as an option. Up to 94% of the input electrical energy is dissipated through the cooling medium (air or water) and can be recovered for space heating or pre-heating domestic water.

The belt driven C series models up to 22 kW are highly efficient and extremely quiet in operation requiring only a minimum footprint. Available in the standard pressure of 8, 10 and 13 bar. Output capacities range from 1.36 – 3.62 m<sup>3</sup>/min and motor power 11 to 22 kW.

The new range is also available with an integrated refrigerant dryer. For more information visit [www.boge.co.uk](http://www.boge.co.uk)



BOGE extend popular C series up to 22 kW.

### BOGE UK 2011 calendar



**Now available**

See Page 3 for full details

### Free Prize Draw

**Be one of 50 to win a free BOGE Ice Scraper!**



See page 4 – FAX CONNECT – for more information ...

**Impressum**

**Publisher:**  
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## BOGE optimises energy usage for Kautex

**BOGE has assisted a leading automotive component manufacturer in optimising their compressed air energy usage by installing a BOGE SF 150 frequency controlled screw compressor along with an airtelligence PROVIS energy management system.**

Kautex, part of the Textron Group, is one of the largest automotive suppliers in the world. At the Hengoed production plant Kautex assembles plastic components for leading automobile manufacturers. Compressed air drives the cylinders and solenoids in this process.

As part of a company wide energy drive, Stephen Mills the Maintenance & Facilities Manager at Kautex invited a number of compressor houses to assess the existing compressed air system. The results of the audits demonstrated that the compressed air energy costs could be significantly reduced by upgrading the equipment.

BOGE recommended installing a SF 150 frequency controlled screw compressor alongside an airtelligence PROVIS energy management system. The BOGE SF series of frequency controlled screw compressors is a



Above: At the Hengoed production plant Kautex assembles plastic components for leading automobile manufacturers.



Right: A BOGE SF 150 and an airtelligence PROVIS management system installed at Kautex.

low carbon technology product that reduces idling times and eliminates pressure fluctuations. The volume flow is continuously adapted to demand which means using less compressed air and so less energy. Furthermore, a tighter system pressure virtually eliminates off load running, and in turn reduces start-up current peaks additionally contributing to potential energy savings. Soft starting also avoids

undue wear and tear and prolongs the service life of the compressor. The airtelligence PROVIS energy management system from BOGE is a consumption based multi compressor energy management system able to control, manage and optimise up to 16 compressors of any make or model. By monitoring all of the compressors within a compressed air system and continuously adapting to changes in compressed air demand,

airtelligence PROVIS, systematically and predictively takes control of a system, minimising costly off load running whilst optimising pressure.

Thanks to the online visualisation programme it is possible to continually manage and monitor the compressed air system at any time and in any place. This tool provides reports on flow volume and operating status of all compressors in the system to maintenance intervals, error alerts and most importantly energy consumption and costs for the entire system as well as for each individual compressor.

A BOGE SF 150 and an airtelligence PROVIS management system were subsequently installed at Kautex. Stephen Mills said "I was already aware of the reliability and efficiency of the BOGE compressors having used them in a previous company.

Additionally the energy savings were a convincing argument to upgrade. The system has been running now for over 18 months and we have been particularly impressed with the airtelligence PROVIS visualisation package. This allows us to more precisely and effectively manage our energy budget on a continual basis."



## Take the first step towards sustainable energy savings!

**David Burton, General Manager at BOGE discusses how compressed air energy savings can be made by undergoing a comprehensive audit.**

"Compressed air remains one of the easiest technologies with which to make quick, significant and sustainable energy savings. The first step is to have the compressed air system comprehensively audited. At BOGE we use our AIRReport auditing system. This sophisticated system allows us to simultaneously analyse up to 12 compressors of any make or model, whilst also evaluating the associated equipment such as the compressed air dryers.

It is important to look at all areas of consumption in order to get a complete picture of current system efficiency and also to identify where savings can be made. For that reason we evaluate generation, treatment, distribution and process usage. Even seemingly small factors are also considered at this stage, for example, how often is the compressed air system serviced? Who is maintaining the compressed air system?

And, are original manufacturer spare parts being used?

A common cause of poor efficiency is usually down to poor or incorrect maintenance, or the use of spurious spare parts. For example, a blocked (or inferior) separator element could increase the pressure differential across the element. This will drastically decrease the efficiency and use more energy than necessary. Not using the manufacturer's original parts, for example rotary screw elements can also drastically alter compressor specification and efficiency and furthermore lead to unnecessarily heightened energy costs.

Air leaks are another area that creates unnecessary energy costs that should be identified within an audit. According to The Carbon Trust, the leak rate on unmanaged compressed air distribution can be as much as 40 % of the output. Fixing leaks can have a large impact on energy costs with just one 3 mm leaking hole costing roughly 3 kW which equates to

some £ 2,000 per annum (depending on your local kW power cost).

Once an audit is completed, the whole compressed air system can be optimised to reduce and if possible eradicate the identified energy waste and misuse. In many cases the recommended changes will only incur low costs – if any. Significant low cost savings can be made by simply identifying and repairing leaks.

Additionally, following the manufacturers recommended maintenance schedule, choosing a

manufacturer trained technician to carry out service work and opting for original manufacturer spare parts will all assist in creating compressed air related energy savings.

Where appropriate, savings can also be made by investing in low carbon technologies. The diagram below suggests some of the options available.

As system dynamics change so will the demand for compressed air. On-going evaluation is therefore vital in order to maintain an energy efficient compressed air system."



There are a number of areas within a compressed air system where energy savings can be made.



## Compact & quiet compressor solution for Melett Ltd

**Melett Ltd, a manufacturer of replacement turbocharger repair kits and parts, recently opted for the quiet and compact BOGE CL 15 screw compressor to power their new CHRA balancing machine.**

Melett manufactures replacement turbocharger repair kits and turbo parts which they supply worldwide to the independent aftermarket to allow reconditioning, remanufacturing and repair of turbos.

At their production plant in Huddersfield, West Yorkshire the parts for CHRA's are assembled and balanced. To be able to continually offer its customers a reliable and high quality range of CHRA's, Melett Ltd recently invested in a new CHRA (centre housing rotating assembly) balancing machine. This machine uses compressed air to spin the CHRA at a high speed. This process allows unbalance corrections to be made which ensures that the rotating components of the turbo are properly balanced with the end result being a more efficient turbo.

Chris Littlewood, Technical Manager at Melett Ltd contacted a number of local compressor houses, including BOGE, to review the new compressed air requirements this investment created.

Dale Cellier, Area Sales Manager at BOGE recommended installing a CL 15 screw compressor. Part of the popular CL series from BOGE, the CL15 model was introduced in April 2009 as part of a product range extension.

Ideally suited to the smaller industrial compressor user, such as garages and workshops, the CL series provides a small and quiet screw compressor and is a range that has already proven to be a winner in its class where reliability and longevity are prerequisites for the end users.

Apart from being extremely efficient and offering a compact design, the CL Series is also noted for its very low sound pressure levels, high performance damping and lamellar graphite casting ensure highly effective silencing producing sound



Melett manufacture replacement turbocharger repair kits and parts.

A BOGE CL 15 was recently installed to power the CHRA balancing machine at Melett.

pressure levels as low as 59 dB(A), making it ideal for point of use applications.

A CL 15 was subsequently installed to power the CHRA balancing machine at Melett Ltd and it was also the first CL 15 to be installed in the UK. Chris Littlewood said "The CL 15 has met our application needs – it is compact

and quiet which is very important as it is at a point of use.

BOGE is a well known quality brand and we were delighted that the compressor came in at such a competitive price – a key factor in our final decision. It's also nice to have them on our doorstep for our ongoing backup and service requirements!"



Q: Why do I need to invest in a compressed air dryer?

Atmospheric air naturally contains water in the form of a suspended water vapour, and the amount is dependant upon the relative humidity and the temperature. When the air is compressed the amount of water vapour increases in volume, depending on the compression pressure. However the water vapour will remain suspended unless there is a drop in the dew point temperature. The dew point is the temperature at which the water vapour in the air becomes saturated and condensate forms.

Condensate consists primarily of water from suspended water vapour in the air drawn into the compressor. It also contains many impurities such as dust and dirt.

Without treatment this condensate will not only damage associated pneumatic equipment but it could ruin the process for which compressed air is being generated.

Including a dryer in your compressed air system is therefore essential. And, by opting for a high quality dryer that operates in an energy efficient manner you could even find your investment pays off through energy savings alone.

BOGE recently introduced the DS series.

These energy saving refrigerant dryers can reduce power consumption during typical operation. Additionally, the DS dryer controller continuously adapts the dryer operation to the real operating conditions creating continuous energy savings.

Investing in a compressed air dryer is therefore an imperative. Not only will this remove the condensate to assure production integrity but by investing in a high quality dryer you could generate efficiencies creating energy savings within the compressed air system year after year.

## BOGE cement energy savings for Bostik

**Bostik, one of the world's leading providers of adhesive and sealant solutions, recently allowed us to photograph their compressed air application for the 2010 campaign.**

At the cement manufacturing plant in Thirk, North Yorkshire, a constant and reliable supply of compressed air is required to power the manufacturing process. As part of a company wide energy drive, Bostik, has created a 32% reduction in their compressed air energy costs. The installation of a BOGE SLF 125 frequency controlled screw compressor at their Thirk cement manufacturing plant is providing Bostik with the ultimate energy efficient solution.



boge intern \* boge intern \* boge intern \* boge intern

## Say Cheese!

The UK team recently posed for the official BOGE UK 2011 calendar. Taking on the style of the international product adverts, each month gives a brief insight into some of the most popular BOGE products on the marketplace. And, you get to look at our lovely team all year round!!

Email us at uk@boge.com to order your copy.\*



\*Subject to availability.

**new** Highlight I

## BOGE extends range of innovative oil free piston compressors

Two years ago BOGE launched the K series which represented a new concept in the efficient generation of oil-free compressed air. The success of the K series has led BOGE to extend this range.

Using the pushrod principle, the K series eliminates the complicated cross head construction. The cylinder bore in which the special-compound-coated piston moves is made of a high-strength aluminium-silicon alloy. These sliding partners lead to friction and therefore loss-free generation of compressed air.

This innovative principle lays the foundation for the economic generation of oil-free compressed air. The K 3 to K 8 with 2.2 to 5.5 kW drives have free air deliveries of 0.24 to 0.65 m<sup>3</sup>/min for 10 bar and 15 bar operation. The K 8 is also available in a 40 bar version.

The market has clearly been keen for such a compressor. The popularity of the K series is testament to this. Many users, in particular from the pharmaceutical and food & drinks industries have been looking for a low-cost compressor that generates high quality oil-free compressed air. The K series has provided the solution.

The success of the K series has led BOGE to develop the range further. The new K 15 extends the range and uses two opposing pushrod units. Using this 'four cylinder' system has made it possible to now generate up to 1.2 m<sup>3</sup>/min of oil-free compressed air.

The K 15 is compact and extremely competitively priced. Utilising the pushrod principle and integrating a high efficiency control make this possible. Additionally, the K series

operates on a stop/start basis – controlled by either a pressure switch (as a standard), or with the BOGE BASIC electronic controller, which ensures the most efficient use of energy.

Low service costs are also assured thanks to the state-of-the-art design which means that very little maintenance is required.

The K series is available as a 10, 15 or 40 bar compressor with effective free air deliveries ranging from 244 – 1296 l/min, motor range 2.2 to 11 kW.



BOGE extends range of innovative oil free piston compressors.

**new** Highlight II

## BOGE introduces new generation oil free screw compressors

BOGE has just announced the launch of the second generation SO 150-2 to SO 269-2 oil free water cooled screw compressors. Increased efficiency, improved volume flow and lower sound pressure values are just some of the developments which have been made.

On-going product development has led to the launch of the second generation SO series oil free water cooled screw compressors from 110 to 200 kW. The new SO 150-2 to SO 269-2 models provide 100 % oil free compressed air, ideal for large compressed air users in industries such the semiconductor, pharmaceutical and food and drinks where the risk of oil contamination is unthinkable.

The new models incorporate the same proven and state-of-the-art compressor technology originally utilised in developing the SO series oil-free screw compressors.

Improvements have been made on sound pressure values, volume flow and specific power efficiency against the former models. A sophisticated sound proofing

design has led to significant reductions in sound pressure levels which have fallen by as much as 8 dB(A) across the enhanced range.

The volume flow (m<sup>3</sup>/min) has improved by as much as 1.48 % with the specific power consumption (kW/m<sup>3</sup>/min) measuring noticeable improvements. The impact for the end user is increased efficiency with the delivery of more air for less power consumption.

The SO-2 series models are available in the standard pressure of 8 and 10 bar. Output capacities range from 16.20 – 26.30 m<sup>3</sup>/min, motor power 110 to 200 kW.



BOGE introduces new generation oil free screw compressors.

**BOGE FAX CONNECT • Reply to +44 1484 712516**

Please send me information on:

- BOGE C series screw compressors
- BOGE SF series screw compressors
- BOGE airtelligence PROVIS energy mgt system
- BOGE Energy saving solutions
- BOGE DS series refrigerant dryers
- BOGE K series piston compressors
- BOGE SO series screw compressors
- Other (please specify): \_\_\_\_\_

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