



# AIRMAG



"HST provides the long-awaited response to increasing cost pressures in the oil-free compressed air segment. Expect to save around 30% on your bills!"

Thorsten Meier, Managing Director

Available for now in three sizes: 55 kW, 110 kW, 220 kW (image shows HST 55)

## HIGHLIGHTS

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Driven to change the established

# BOGE reinvents compressed air with its new High Speed Turbo!

Dear Readers,

One of the happiest moments in anyone's professional life has to be when a quantum leap is made at the end of an intensive and top-secret development period.

And we are by no means the only ones for whom series production of the new High Speed Turbo compressors signals a new era in the segment of oil-free compressed air, since this "downsizing" also applies to the cost aspect.

With this new and conclusive evidence that environmental protection and cost reductions need not be mutually exclusive, BOGE is now able to address a whole new range of user groups.

An atmosphere of change and optimism can also be found in other areas of our portfolio: With no fewer than 11 new products introduced within just one year, we are in a perfect position to offer our customers new and relevant compressed air solutions to meet their specific requirements. This is all the more pleasing in light of the recent expansion of BOGE's global sales network. This too is explained in more detail on the following pages.

We hope you enjoy this edition.

*Wolf D. Meier-Scheuven*

Wolf D. Meier-Scheuven,  
Managing Director

*Thorsten Meier*

Thorsten Meier,  
Managing Director



This symbol will soon be creating a worldwide furor.

**For generations now, BOGE has been contributing a great deal towards establishing compressed air as a central source of energy. Many improvements in the branch, however, were made by developing ever more complex systems, which increased the consumption of resources and resulted in higher costs. Now, BOGE has traced the path in reverse and achieved a quantum leap in performance by means of systematic reduction.**

A well-known German liqueur manufacturer has the advertising slogan: "Who if not us". The engineers at BOGE must have had a similar idea as they stood before the

seemingly impossible task of developing a new kind of compressed air technology that would use not more components, but fewer, to produce the same performance and free air delivery as an oil-free screw compressor of more than twice the size. A few firm convictions and a number of previously indispensable components were abandoned along the way: Not only do BOGE HST compressors eliminate the need for any type of transmission, they also dispense with fan motors, lubrication systems and oil pumps. A similarly drastic reduction also occurs in the number of bearings and seals (see table). The reward for our endeavours is a new generation of compressors that is considerably less susceptible to wear and significantly lengthens the interval between services.

### A new definition of high speed

Turbines have proven their worth over the course of decades in more than just the aerospace sector. But if you think it is possible to simply buy a suitable turbine, you are mistaken. In actual fact, our engineers often had to demonstrate genuine pioneering ingenuity in order to bring about the numerous design changes. Product manager Lutz Knoke summarised this as follows: "In order to put our vision of a completely oil-free drive into practice, we had to reinvent the wheel to a certain extent."

### The numbers speak for themselves

HST compressors weigh only about a third as much as an oil-free screw compressor and the footprint has been reduced by more than 50%. Even more amazing, however, is the difference in costs: The superior HST drive concept results in overall costs that are 30% less than those of rival oil-free compressors!

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#### Components reduced – reliability increased

Number of components	BOGE HST Compressor	Oil-free screw compressor
Transmission	0	3
Bearings	6	19
Seals	3	17
Fan motor	0	1
Lubrication system	0	1
Oil pump	0	1

#### New dimensions

Footprint	< 50 %	100 %
Weight	Approx. 25 %	100 %
Sound emission	63–69 dB(A)*	80 dB(A)

\* Depending on compressor size

(Continued from page 1)

No friction, no sweat:

## Air bearings ensure higher speeds

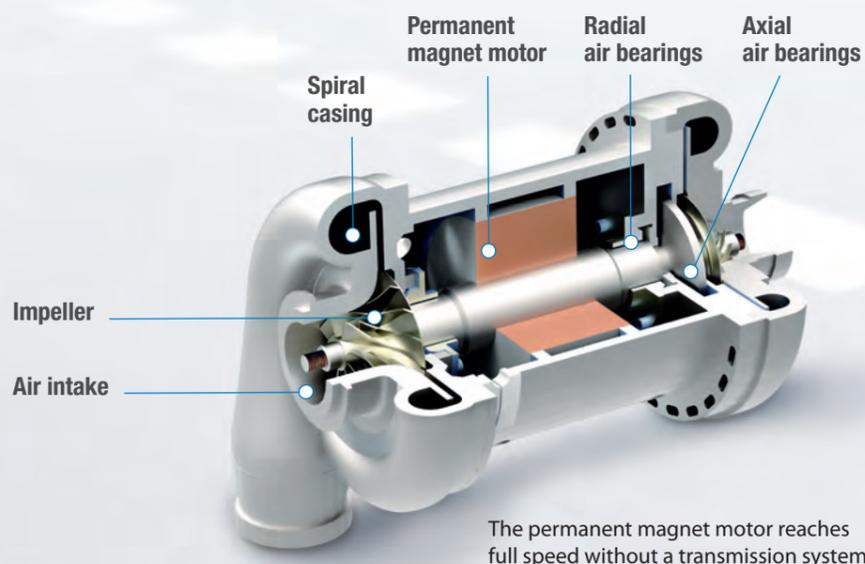
Throughout the sector, the development of smaller, lighter compressors is being pushed forwards. And BOGE is not the only manufacturer looking towards turbine technology. But there is still nothing that really compares with the HST technology developed by BOGE. The superiority of the HST principle is most evident in the air-supported drive shaft – this reaches rotational

speeds that seemed unattainable in the past – and is practically wear free.

Previously, it was considered to be an irrefutable fact that drive shafts need to be lubricated. BOGE has taken quite a different path, however, with its High Speed Turbo technology.

Thanks to air bearings, the entire drive machinery runs without lubrication –

### The design advantages of the BOGE HST range



Significantly improved volumetric efficiency:

## PO with new talents

Maximum free air delivery with minimum energy consumption – this apparent contradiction is resolved convincingly by the radically overhauled PO range. In addition to a significant improvement in efficiency, the development objectives included a more compact design and a longer service life.

A space-saving cylinder configuration according to the V principle, a close-fitting spiral tube cooler and a compact crankcase – these are the external hallmarks of the new oil-free PO range, which make even twin units on top of a receiver possible, or compressed air stations with tanks and dryers. On the inside,



coated pistons and specially developed cylinder liners bear witness to the precision work put into the details. The results are impressive, with greater efficiency and volumetric efficiency.

“The V twin hardly vibrates at all and runs extremely quietly – no comparison to a Harley.”

Timo Kramer, Technical Developer



Lutz Knoke, HST Product Manager

and particularly users who rely on 100% oil-free compressed air for their sensitive production processes will sit up and take notice at this, of course. Other benefits of the air bearings include high rotational speeds and a maintenance friendly design. And, of course, HST is “Industry 4.0 ready”!

### The revolution is coming and treading softly

Until you have seen these machines in action, it is difficult to fully appreciate the importance of the new HST range for the industry as a whole: Where previously an oil-free screw compressor often needed to be moved away into an insulated machine room for noise protection reasons, an HST model can be freely deployed. Directly at the workplace, for example. And not only because it takes up so little space. Due to its design, the operating noise emissions are much more tolerable, at a surprisingly low level of

63 to 69 dB(A) (depending on the compressor size). An oil-free screw compressor, by comparison, reaches a level of more than 80 dB(A).

### Intelligent cost controls

With its low purchase price and reduced maintenance costs through to the unbeatably low energy consumption (which is barely measurable during idle operation) – HST is a new and promising competitor in the sector of “oil-free compressed air” and allows even ambitious savings targets to be met. “30% savings in energy costs alone” are realistic according to Product Manager Knoke.



Find out more, with no obligation, by simply scanning the QR code. Or go to [boge.com/hst](http://boge.com/hst)

First unveiled at ComVac 2015:

## EO with scroll compressor

Customers who rely on 100% oil-free air for their sensitive applications will soon have an even wider choice. The new BOGE EO range – available from the end of the year – offers impressively low vibration and whisper quiet running, with a modular concept that ensures remarkable depth of detail.



In the oil-free compressor segment up to 22 kW, you have to look very hard indeed to find a gap that is not covered by the piston compressors of the PO and K ranges. But it is there nonetheless – at least according to some customers who deal with sensitive applications in laboratories or hospitals. It was the special requirements of these customers that the BOGE development engineers had in mind when devising an oil-free compressed air system that would not only work extremely quietly but could also be configured flexibly.

### Eccentric but low-maintenance

The requirements of these customers were: Make us a compressor that is so quiet that it can be used directly at the workplace (which also meant that it must be able to pass through a standard door). To meet these requirements, BOGE opted to use scroll compressors in the new EO range (Eccentric, Oil-free), not least

because these are also guaranteed to be oil-free by virtue of their design. Their scroll compressor airends can be switched in one after the other. This makes it very easy to match free air delivery to actual demand. The outcome was a whisper quiet, low vibration compressor that operates using a minimum number of moving parts. At the same time, the space required was also intentionally reduced. And yet the best argument for the new EO range has to be its modular concept: whether it be a refrigerant dryer or cyclone separator – everything can be compactly integrated.



Whisper quiet, low-vibration and tailor made – ideal for bringing closer to the workplace.

The successor to the S series is lining up for the start

# The clear favourite in all disciplines!

If one were to look at car categories, the S series from BOGE would probably be most comparable to the Mercedes-Benz E-Class: As a solid model and a cutting edge technology leader, it plays an important role for the company. Hence, the experts are excitedly looking at the upcoming generation change, which is accompanied by numerous innovations. A first look at the S4 prototype shows that the high expectations are justified.

Even the current version of the S series set new standards for efficient and reliable production of compressed air. However, as is generally known that the better is the enemy of the good, BOGE therefore significantly raised the bar for the new model (code name "Brisbane") again. The S4 is growing to become a successor that has what it takes, to immediately score points as a new forerunner in several disciplines: Therefore, as the quietest of its kind in the

entire competitive environment, it will be able to move even closer to the manufacturing workplace in future than ever before.

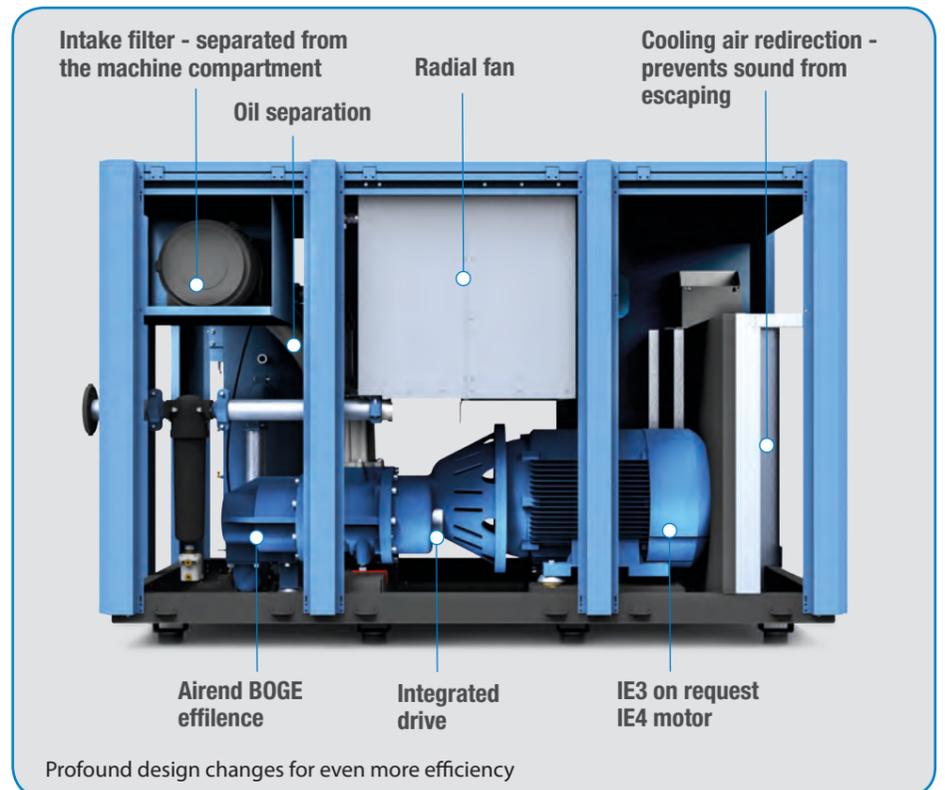
## New drive concept increases durability

The main difference compared to the previous series is the shift away from the belt drive. The new airend for the S4 models presents itself with an integrated drive, which has a significant impact on maintenance intervals. The drive is now completely enclosed, has low losses and is completely maintenance-free, its lubrication being fed by the oil circuit of the compressor. Since the cyclically occurring belt replacement is dispensed with, the S4 opens up entirely new perspectives for two or three-shift operation. And with 35-40,000 maintenance free operating hours of the drive - these are numbers that are worth a closer look. Also in terms

of flexibility, the integrated drive provides important advantages: Since the new airend can be aligned to the optimal operating point (exactly this requirement adaptation from 75 kW to 110 kW was one reason for the choice of the belt drive for the S3 series), all performance ranges and all pressures can now be variably controlled.

## Once more, efficiency has been significantly increased

BOGE can still look with pride at efficiency today,



the airend of the current S3 series, which in terms of efficiency, smoothness and sound pressure operates at a high level. With the precision work on the profiles of the new airend and some basic design changes, it was possible to significantly improve these values again. The efficiency has been optimised by, among other things, a particularly low power consumption and the minimisation of internal pressure losses.

## "You will hardly find a quieter screw compressor anywhere"

"While developing the S4, anything that could somehow contain the sound pres-

sure has been tried", says Frank Hilbrink, S4 Project Manager at BOGE. "First, a radial fan was installed, which operates quieter due to the type of construction. Additionally, it still operates at very low speed to avoid unpleasant high sound waves. Another important step towards sound insulation was also the redirection of cooling air. However, the most effective measure was the separation of the compressor and receiver, which previously acted as a type of sound box." A secondary aspect of the new design features: Additional space was created to accommodate a larger cooling area and additional sound insulation measures. The start of series production is planned for the end of 2015.



Long-distance runner with special talents:

# The new S offshoot BOGE SL and BOGE SG

As ambassadors of the recent product campaign, two screw compressor series stand out: The SL models with direct drive, which are completely immune to dust, and SG models with their combination of direct and integrated drive. Both are suitable for use under difficult conditions.

Both have a beltless drive, so this means that V-belt maintenance is not needed at

all. This is not only good for the budget, but also increases availability. SG models score with a particularly slow rotating airend and a low-loss integrated drive that allows the compressor to always operate at the optimal operating point. Hence, the SG compressors can be perfectly adapted to the required pressures and outputs. Thanks to the low power consumption of the drive motor, the SL series shines with phenomenal efficiency values. In line with market requirements, its standard design is adjusted to 7.5 bar.

## For every niche where it gets rough

Both are children of modern times, and can be confidently controlled with the new modular focus control 2.0. Low maintenance, undemanding and reliable, they are made for environments where others do not dare to enter. Each in its own way.



For those who have no extra space to give

## The flexible complete solution C 15 DR

**As they say: there's room in the smallest of hovels. The C 15 DR comes in to prove just that. It combines compressor, dryer and receiver in a particularly tight space and pleases with extremely quiet running - this allows it to do its job directly at the workplace. Numerous processing and filtering options make it the flexible all-rounder.**

Compressors of the C series - known for high output volumes at low power consumption and minimal pressure losses - are ideal for solutions such as this: They operate with a smart design that integrates all essential components in the compact compressor module, and since piping and connecting lines are dispensed with, leaks are virtually eliminated.

### Installation work is kept at a minimum

All individual elements - from the dryer to the optional condensate cleaner - are ready installed and are delivered as a ready-to-connect compact unit. This

principle applies to all special requests, whether integrated filters, a supply air filtration system or a frequency converter, which continuously adapts the free air delivery to the individual operating conditions. A true "plug & play" solution.

### Comfort can be adjusted

The "base control" control unit with an LC display and pressure sensor technology comes as standard on board. The modular focus control 2.0 is also optionally available which offers an RFID interface, in addition to the integrated efficiency display and the proven BOGE leakage monitor. The decisive factor is the individual need.



Here it becomes even easier - just scan it and learn more.  
[www.boge.com/hmi-news](http://www.boge.com/hmi-news)



Super sound insulated and extremely compact, the BOGE C 15 DR can be installed right at the workplace.

Simply reliable

## Play it safe with Caircheck

**BOGE compressed air filters provide constant differential pressure for one year. Guaranteed. You will never miss the time for compressed air filter replacement again, because every filter comes as a standard with a credit card-sized test strip, which displays--after one year of activation--the next due maintenance. That is all there is to do to ensure consistent pressure quality. Standard for:**

- FM/FP filter
- Condensate cleaner BOGE CC
- Drain to DS dryer



High touch website for high-tech products

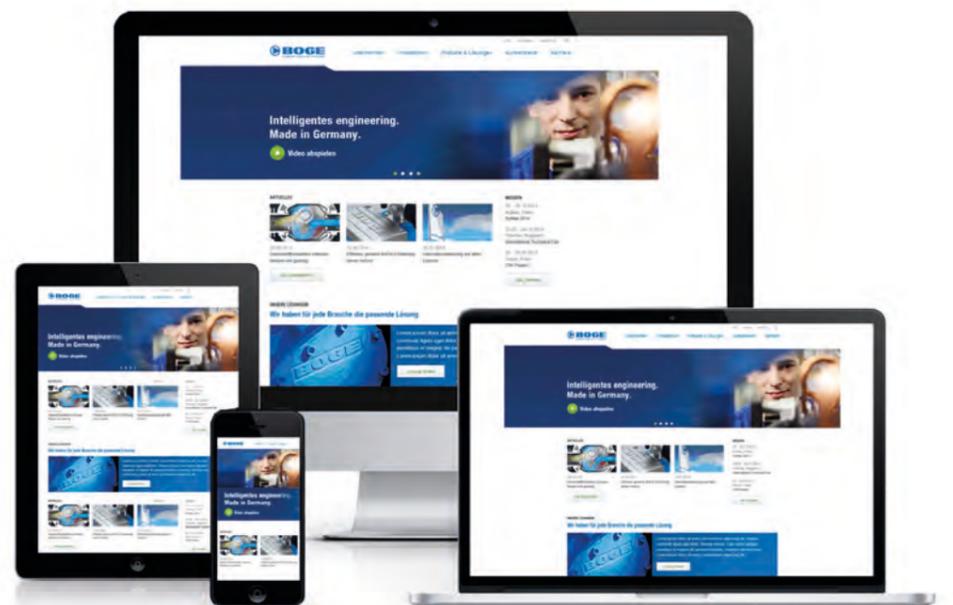
## www.boge.com shortly before the relaunch

**BOGE is planning to launch their new homepage in June 2015, which takes the changed media consumption habits into account and will become significantly "more accessible" than before. In addition to the stronger focus on Facebook, YouTube & Co., boge.de will be providing practical support to the sales force.**

"Driven to change the established" - also applies for the BOGE web portal,

which is currently under development. AIRMAG was able to look over the programmers' shoulder and noticed: This is a brand new "look and feel" with big, bold images and many film links to convey information quickly.

The modern design makes the brand essence optimally visible, and the protected area for sales and trading partners will soon benefit from the improved navigation and the many additional functions.



Thanks to the "responsive design", the digital offensive with BOGE can be seen equally well on all terminal devices.

The product offensive hits its peak

# BOGE continues to focus on growth through innovation

Double-digit growth, record sales - the 2014 financial year proved to be extremely successful for BOGE compressors. At the same time it will go down in history as the year in which the course was set for a product offensive without precedent.

The ambitious goals that kept the research and development area holding their breath for the entire year encompassed far more than the thorough modernisation of standard products, or the development of the new business segment nitrogen and oxygen generators. What makes the appearance of the compressed air specialists at ComVac 2015 a memorable event, is primarily the presentation of the series-production ready High Speed Turbo series (see page 1-2), heralding a paradigm shift in the oil-free segment.



## Compressed air is getting smarter

Just a few years ago - long before the term "Industry 4.0" emerged - although BOGE was a pioneer in intelligent solutions, which made the interaction between man and machine simpler, the "Internet of Things" is now on everyone's lips. Today, it proved to be a wise decision that BOGE focused early on intuitive and easy-to-use control and monitoring systems because "Industry 4.0" is the focus topic of this year's HMI. With airstatus, BOGE has a sophisticated and forward-looking remote diagnostic tool in the portfolio, which promotes the ideal of the modern factory where everything is networked. airstatus lifts the user-friendly operation of compressed-air stations to a higher level, providing users with maximum

reliability and transparency in the compressed air supply. With the free BOGE app, this condition-based remote monitoring can be operated very conveniently via a smartphone or a tablet PC.

## A fireworks of innovations

The spectacular presentation of the new High Speed Turbo series is of course the core of the BOGE exhibition show in Hanover, but other innovations have also what it takes to be a "head turner": From prototype of the EO series with scroll compressors to the numerous derivatives of the S series, BOGE offers a wealth of new models, all designed with special attention to maximum energy efficiency. Whether speed control, intelligent controls or heat recovery - BOGE incessantly adjusts the parameters with which operators can achieve a significant reduction in their energy costs. This resulted in compelling solutions for virtually every need. In 2015, BOGE is therefore striving for another increase in sales to 130 million euros.

# Canadians on the road to success with BOGE



Ron Fry, President of Central Air Equipment, based in Calgary in the Canadian province of Alberta, has every reason to be pleased. Since CAE introduced BOGE products into its range just over three years ago, the company has become the largest compressor dealer in Western Canada. "This wouldn't have been possible without the remarkable support provided by the manufacturer", says Fry in his latest success report, and adds, "Boge has helped us to increase our market share not only in Alberta, but also internationally". This may also be due in part to the committed and unbureaucratic way in which Central Air Equipment helped the world's largest Caterpillar dealer, Finning International Inc., out of an unfortunate situation. Turn to the back page for the details of how this came about and the solution that CAE presented. This makes us all the more delighted with Ron Fry's statement that our colleagues in Calgary consider themselves to be "full members of the BOGE team" and are "working together to continuously build up the market presence".

"Boge has helped us to increase our market share not only in Alberta, but also internationally".

Ron Fry, President Central Air Equipment



A heartfelt Ka kite ano\* to the other end of the world!

# BOGE expands in New Zealand



From left: Sam Potter, Dr. Thomas Henzschel, Merv Potter, Jim Rohner and the head of the new branch, Kyle Hunter

Air Gas Compressors, BOGE's long-established dealer in New Zealand, has ceremoniously opened a second branch in Auckland. Here, AGC is strategically well-positioned to supply BOGE products to the rapidly growing northern region of New Zealand with optimum efficiency. In these parts, "ceremoniously" means with an extended "Powhiri" - the traditional Maori welcome ceremony.

This involved the guests being received by the local Maori chief, who waited in one of the factory halls with several warriors. The meeting proceeded with the guests waiting at a polite distance until a Maori singer addressed a song to them. Another Maori, waiting amongst the guests, answered with a song and, still singing, led the guests towards the chief.

The honoured guests from Germany included Monique Surges and Erich Bachmann, Director and President of the New Zealand/German AHK, and Dr. Thomas Henzschel, Deputy German Ambassador in New Zealand. Before the Maori chief took the floor as the first speaker, a group of school pupils performed the traditional "Haka" - a ritual challenge with loud battle cries.

Merv Potter, his father Sam Potter, Dr. Henzschel from the Embassy and Jim Rohner, General Manager of BOGE Australia were able to follow this closely from the first row. He was particularly pleased: "After three years of painstaking work, the project is complete. BOGE played an important role in finding a strategically

optimal location and in selecting staff and plant for the subsidiary. The new branch reflects the BOGE brand and therefore far exceeds the general standards within the sector. We are now in an optimum position to fully exploit the potential of the market." Incidentally,

one of the guests - in this case Kyle Hunter - had to reply to the chief's speech not only with words, but with a song.

BOGE congratulates Merv Potter and the entire team at Air Gas Compressors on taking this large step!



\* For those who do not speak Maori: "See you again"

## Interview with Matthias Eichler, Head of Branding and Marketing Services

# “BOGE had Industry 4.0 already on the agenda for a long time.”

**Focus of this year's HMI is "Industry 4.0". AIRMAG interviewed Matthias Eichler, Head of Branding and Marketing Services, regarding the current status of the BOGE development.**

**AIRMAG:** If one follows the self-representation of the industry, all have changed to Industry 4.0 for quite some time now. Do you agree?

**Matthias Eichler:** We must not forget that BOGE had Industry 4.0 already on the agenda much longer than others, even well before the term was even coined. The revolutionary remote diagnostic tool BOGE airstatus with the legendary BOGE App, was already put on the market in 2011, and its huge potential is really standing out for many only now. Our know-how advantage is particularly noticeable here.

**AIRMAG:** What does it mean in practical terms?

**Matthias Eichler:** Today, airstatus opens up new options in the aftermarket sector. The intelligent combination of data does not only allow us to develop new business models in the form of innovative product-related services, but the same is also possible for our trading partners. Most service contracts are based, for example, on a periodic service. Thanks to airstatus, the service partner can now detect

early on whether maintenance must be brought forward or is not yet necessary at all. This creates a lot of advantages for efficiency, operational reliability and capacity planning, which can lead to appropriate creative service offerings

**AIRMAG:** Does that still require a lot of convincing?

**Matthias Eichler:** Acceptance will certainly grow rapidly, because the opportunities for competitiveness are so blatant. For users it is, for example, a welcome improvement if the diagnostic process becomes increasingly automated. Why shouldn't a device that was detected by the airstatus system be able to arbitrarily order the appropriate filter from the supplier, and order the service technician who installs this spare part too? That's pretty much what is meant by "Internet of Things".

**AIRMAG:** Are the possibilities of Industry 4.0 exhaustively described?

**Matthias Eichler:** Absolutely not. The increasing digitalisation will certainly open up more possibilities that we can't even imagine right now. And the more systems are operated with an intelligent control unit or the faster the software develops, the more likely it will allow, for example, cloud-based services to prevail.



"Our know-how advantage is particularly noticeable here."

Matthias Eichler, Head of Branding and Marketing Services

**AIRMAG:** This is about "big data" then. What about data security?

**Matthias Eichler:** This is not a new subject to us. Of course, any provider of Industry 4.0 solutions must ensure that safety standards are always up to date. I think it is a great step forward that Fraunhofer IOSB established an Industrial 4.0 service now, which is devoted to the fundamen-

tals of data-based business and innovative methods of data analysis across industries. This will additionally accelerate the development of security.

**AIRMAG:** Thank you for the interview.

Test the BOGE APP with your own demo access at [boge.de/app](http://boge.de/app).

## Central Air Equipment like a knight in shining armour

# Caterpillar's "Centre of Excellence" swears by BOGE Compressors

**It all started with a thorough screening of eligible compressor manufacturers, as Finning International, Inc., the largest Caterpillar dealer in the world, was looking for a replacement for their old compressors. But then the events snowballed.**

Finning International had very clear ideas regarding the requirements their future compressor supplier had to meet: They were looking primarily for a partner who would be available for maintenance at any time and would adhere to their service promise. In addition, a reliable, energy-efficient compressor was needed to replace two obsolete 150-hp compressors, which had proved to be extremely costly to operate. Central Air Equipment (CAE) carefully analysed the compressed air demand which was required for sandblasting and painting the huge "Earth Movers" brand, and proposed a directly driven BOGE SLF compressor with a frequency converter. When a compressed air system, which

included a BOGE SLF-75, was demonstrated to a CAE customer, the customer was impressed. The Finning delegation was, particularly, taken with the clean installation of super sound insulated machines and the BOGE airtelligence plus control unit.

### Reliability is the most important thing

Just when an order for a new BOGE SLF 75-3 was placed with CAE, both compressor veterans broke down. In this critical situation CAE jumped in by lending a BOGE S50-2 from their own inventory, which was quickly supplied with a rented diesel compressor. CAE had already noticed during its needs analysis that it was not just about energy cost savings. Now it became clear that reliability and redundancy were equally important. In addition to BOGE SLF 75-3, CAE recommended installing three BOGE S50-3 with lower power for the base load supply -



At Caterpillar dealer Finning International Inc. in Calgary "business runs as usual", thanks to BOGE America.

as redundancy for the peak load measured. CAE also recommended a BOGE airtelligence plus control unit. Finning followed the recommendation and has been

operating failure-free with four new BOGE compressors since 2014. The efficient help that CAE and BOGE provided to Finning in order to maintain production, remains unforgettable until this day.

## Feedback

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