

BOGE T series

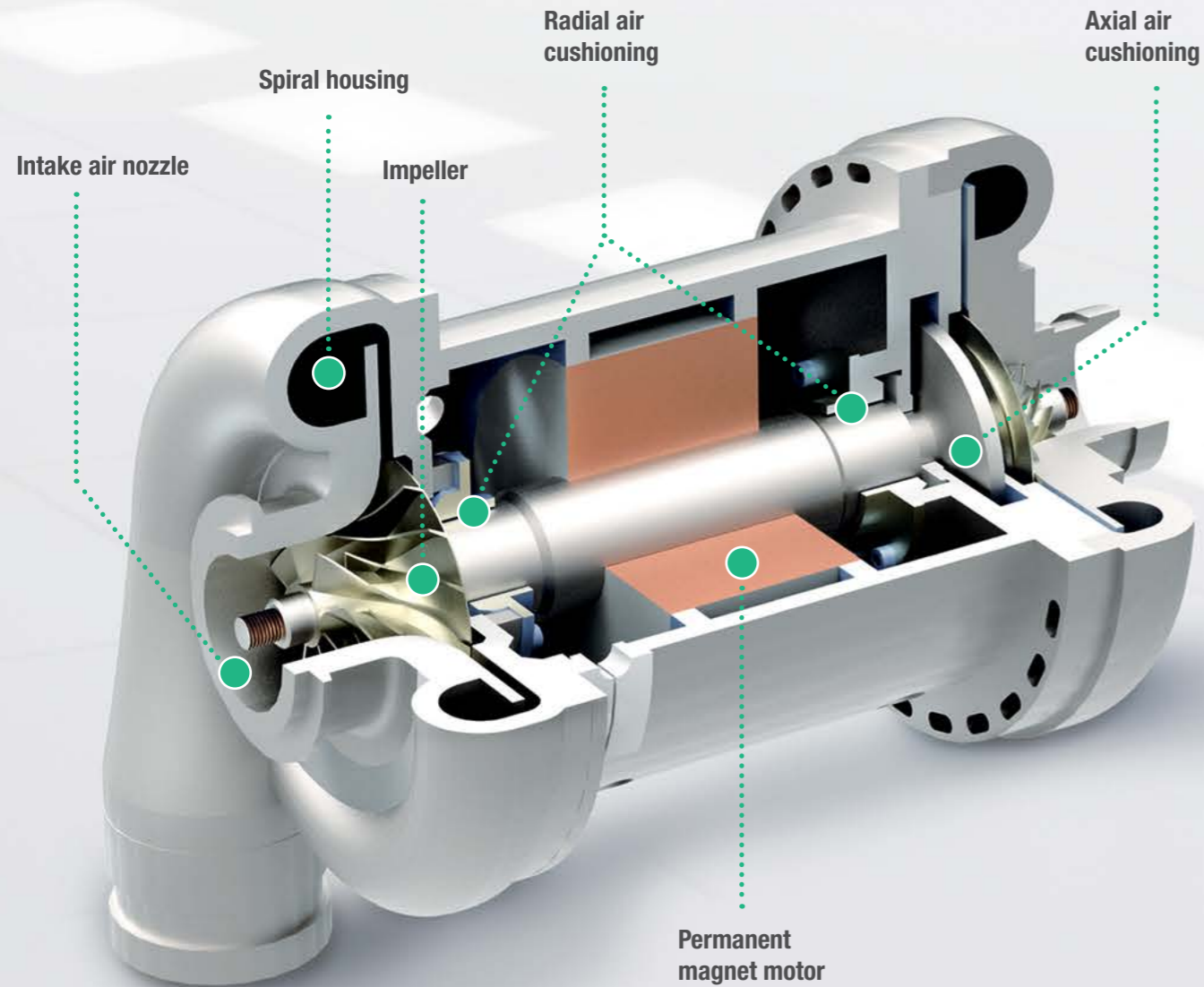
The efficient turbo for oil-free compressed air



Made in Germany 
since 1907

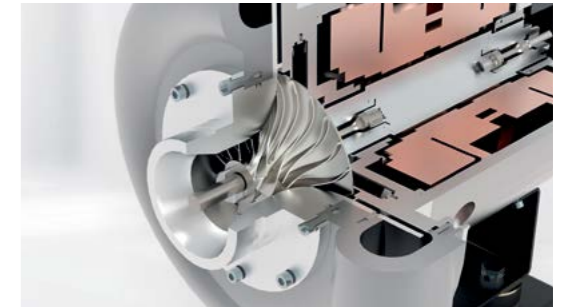
A smart concept in all respects

BOGE's new T series has recognised the signs of the times: Significantly fewer components and complete operation without oil and lubricants guarantee low-wear operation. Maintenance and operating costs are reduced to the lowest level, and the extremely high energy performance ensures maximum efficiency. The incredibly small footprint and remarkably low sound pressure level are also advantages of this superior drive concept. The result: oil-free compressed air with minimal space requirements ... and surprisingly cost-effective!



High speed by conviction

Permanent magnet motors, as used in the T series, have several advantages: They take up little space and – even though no gears are used – allow high speeds beyond 100,000 rpm and convince with very high performance in a minimum space. This makes it easy for the high-quality titanium impeller at each end of the drive shaft to generate compressed air in conjunction with the diffuser and spiral housing.



Versatility as a logical consequence

The pioneering drive concept of the BOGE T series not only guarantees top efficiency ratings but also offers maximum flexibility during execution: Put simply, the main difference between the high pressure range models (T) and the low pressure range models (LPT) is the number of airends used. Both areas of application benefit equally from the significant reduction in movable parts because this results in minimum wear and exceptional reliability.



Increased efficiency? Easily!

With their smart design that protects resources, these models get to the heart of the downsizing principle: Compared with conventional screw compressors, they have been reduced to half the size and a third of the weight. This means they can be placed in position more easily and quickly using smaller lifting aids and they offer significantly more available space for maintenance in a specified area. When older machines are used in particular, the compact design makes the replacement process much easier.



Scores of benefits, thanks to air cushioning

To provide maximum speed, the air-cushioned shaft needs neither external energy nor any operating material other than air. Air cushioning does not need an expensive electronic control, batteries or a capacitor. It simply works all the time, even during a power cut. Most of all, however, this type of cushioning guarantees practically wear-free and therefore low-maintenance operation.



More energy with fewer raw materials

The pioneering drive concept of the T series is the best proof that maximum efficiency and distinct sustainability are not mutually exclusive: Significantly fewer components – first and foremost, this is an indication of particularly reliable, low-wear and low-maintenance production of oil-free compressed air. And when in idle mode, these compressors stand out with excellent energy consumption.

Main advantages at a glance:

- Superior drive concept
- Maximum efficiency
- No oil or lubricant whatsoever
- Extremely small footprint
- Low maintenance and operating costs
- Powerful heat recovery
- Long service life
- Significantly lower sound pressure level



Components minimised – reliability maximised

Number of components	Example: BOGE T 220	Oil-free screw compressor
Gears	0	3
Bearings	6	19
Seals	3	17
Fan motor	0	1
Lubrication system	0	1
Oil pump	0	1

Unparalleled efficiency

The narrow T series represents top ratings when it comes to energy efficiency. This is most obvious during specific power consumption where these models have clear advantages compared with conventional screw compressors. No surprise really, thanks to the “slimmed down” design: The only mobile components are air-cushioned which promises maximum aerodynamic efficiency. Additional consumers, such as fan motors etc., are not needed.



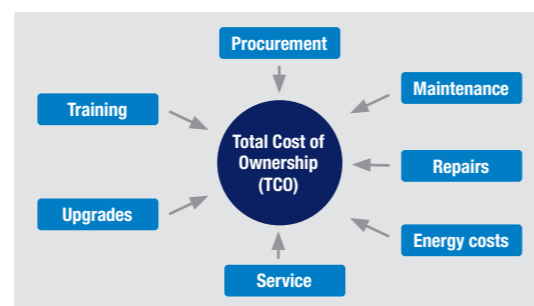
Home-made quality

Compressed air systems must work reliably. That is why BOGE only ever uses the best materials, high-quality workmanship and an exceptional “made in Bielefeld” vertical integration that also includes motors and compressors. Many customer requests were included in the intelligent engineering of the T series from the beginning.



Surprisingly cost-effective progress

From clear procurement costs and minimised energy requirements as well as low-wear operation to plannable service intervals – the T series provides all technological prerequisites for successfully implementing even ambitious energy-savings goals.



Of course, this applies to every component.

All models in the T series feature motor parts made of premium-quality stainless steel, high-grade titanium impellers and extremely strong rotors. After all, these are requirements for the lowest tolerances. Combining premium quality with smart, innovative solutions has proven effective.



Every design detail revised

A virtually maintenance-free, air-cushioned motor shaft not only allows for completely oil-free running, but also ensures extremely low vibration. This innovative design element is also the prerequisite for the extremely high speed of the permanent magnet motors of much more than 100,000 rpm. The high-pressure T series compressors with three compressor units are also characterised by their compact, particularly maintenance-friendly design, scoring top marks for energy and resource efficiency.



Control

The focus control 2.0 control software specifically adapted to turbo compressors ensures safe, gentle and economic operation. It displays all relevant process figures as well as logging and a performance map, including forecasts.

Motors

The T 220 is equipped with two highly efficient permanent magnet motors. All motors are cooled by the intake air.

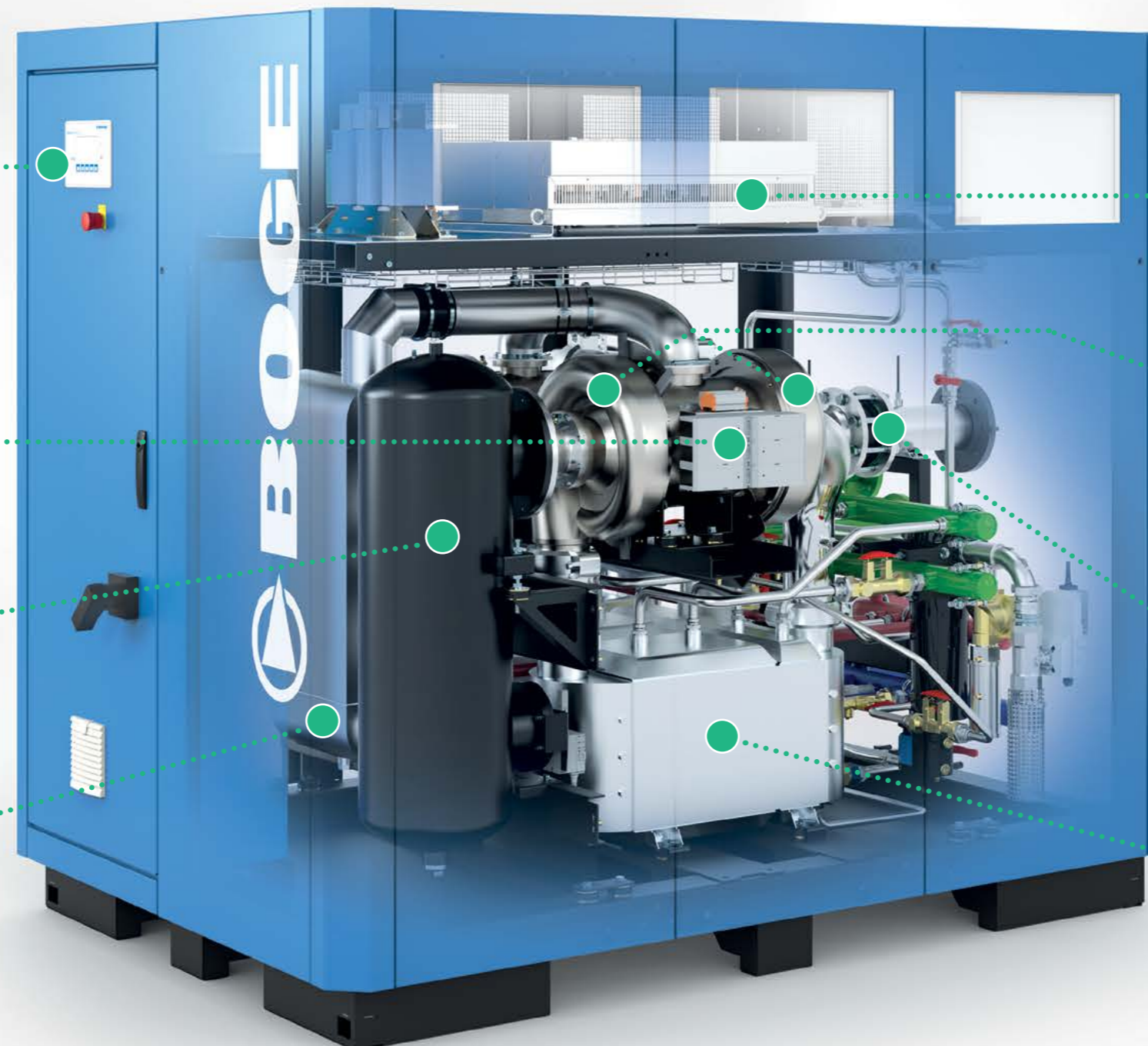
Intake air box

Particularly high efficiency is achieved by air intake right above the regular opening because this generates less differential pressure. In the air intake air box, the air is taken in via the motor and bypass is mixed ...

Intake air cooler

... and cooled at the same time by the intake air cooler to guarantee the lowest possible intake air temperatures for the first airoend.

Example: T 220



Frequency converter with cooling

The "multi-level PWM" technology reliably adapts the compressor to the actual compressed air requirement and governs motor speed depending on volume flow and pressure.

Compressors

The T 220 features three compressors downstream of each other that generate compressed air with the required final compressed air pressure. Both in the T 220 and LPT 150, the first two compressors are powered by a motor. In the T 220, the third airoend has an additional motor.

Compensator

The compensator effectively reduces vibrations. By separating the connections between the system and the network pipes, they become virtually vibration-free.

Compressed air cooler

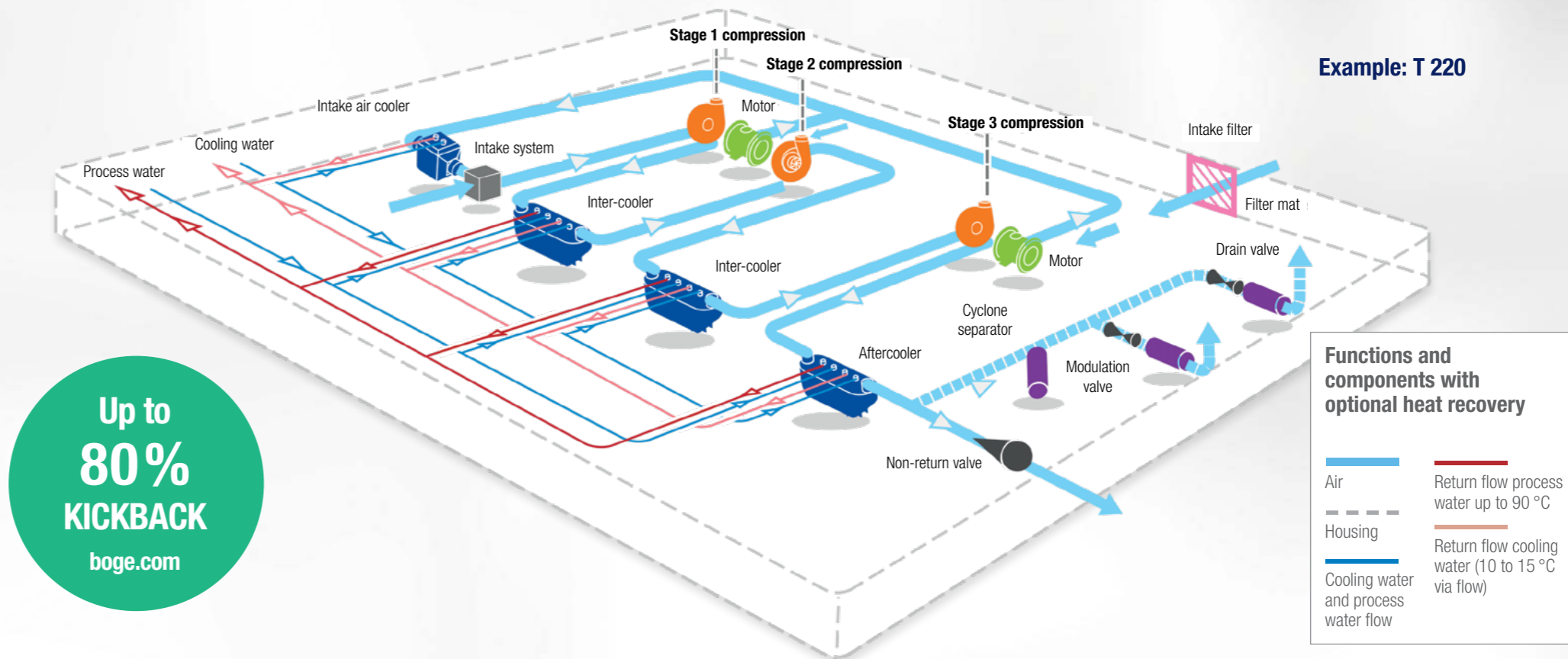
There is a compressed air cooler downstream of each airoend. It guarantees the ideal compressed air inlet temperature for the next airoend and minimises the compressed air outlet temperature at the outlet of the compressor.

Oil-free based on experience, sustainable as a matter of principle

We have used a very simple formula to make the T models particularly sustainable: Fewer components reduce costs and increase reliability. After all: something that is not built in cannot wear. Plus, this results in lower maintenance and operating costs as well as extended service life.

This completely transforms your turbo compressor into an energy saving machine!

Even though the BOGE T series is scoring top marks concerning energy efficiency, more savings can still be made: Thanks to the tried-and-tested heat recovery system, you can cleverly minimise the primary energy requirement. Up to 80% of the energy used can be recovered and used for other purposes. This is something the climate and the environment will additionally benefit from.



Up to 80% KICKBACK
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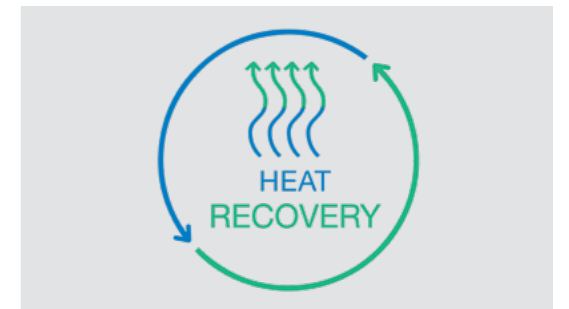
Class 0 oil-free compressed air

This classification is effortlessly achieved by the new BOGE turbo compressors: The innovative, air-cushioned motor shaft runs without needing any lubrication. These compressed air systems consequently feature completely oil-free compression.



Heat recovery? Any time!

No additional space is needed for efficient heat recovery because all models come with the prerequisites for this option as standard. This means a savings potential up to 80% can be achieved; the usable service water reaches temperatures of up to 90 °C. In addition to the excellent cost savings, environmental aspects are also benefits – thanks to fewer pollutant emissions and less thermal stress on the environment.



Shorter downtimes are programmed

The decision to boost efficiency with fewer resources does not just increase the reliability of BOGE's turbo compressors: since there is neither a drive nor an oil system, and the number of bearings is kept to a minimum, maintenance costs are barely in the equation. No oil or oil filter replacement can hold you back, and maintenance costs are pleasingly low.



“Miniature” even when it comes to the CO₂ footprint

When it comes to CO₂ emissions, the superiority of the “slim” drive concept really stands out because the system's energy efficiency provides the environment with sustainable relief. Thanks to their minimal energy and resource requirements as well as their weight benefits, these models have an exemplary Product Carbon Footprint (PCF). The fact that the T series sets new sound level standards, also fits the bill.



Measurable benefits even in the low pressure range

The impressive advances made by turbo technology in the area of the production of completely oil-free compressed air, are not only evident in the high pressure range: low pressure networks also benefit from the design features that set standards in efficiency, reliability and low wear.



Switch cabinet

In the LPT 150, too, focus control 2.0 monitors and illustrates all relevant process figures and provides valuable forecast data for maintenance and operation. The switch cabinet is vented by the airdent intake. An active fan is therefore not required.

Power level

At the power level, the LPT 150 has a built-in frequency converter, the T 220 has two frequency converters. It is located on a water-cooled plate cooler which guarantees sufficient cooling at all times.

Motor

The LPT 150 also has a highly efficient permanent magnet motor which is cooled by the intake air. Housing and intake air nozzles are made of nickel-plated steel, ensuring highly effective corrosion protection and a long service life.

Intake air box

Particularly high efficiency is achieved by air intake right above the regular opening which reduces differential pressure and effectively cools the intake air at the same time – at a lower cooling water temperature. In the intake air box, the air is taken in via the motor and bypass is mixed and cooled at the same time by the intake air cooler to guarantee the lowest possible intake air temperatures for the first airdent.

Example: LPT 150



Air inlet with filter

In all models of the T series, the air is taken in via openings in the area of the power level and filtered using paper filter mats. Optional pre-filters can extend the service life of these filter mats.

Compressors

The LPT 150 features two compressor units in series (downstream of each other) that generate compressed air with the required final compressed air pressure. In the LPT 150, too, the two compressors are powered by a motor.

Venting

Two venting valves, one of which with modulating operation, support the system during start/stop and load replacement, thus relieving the overall system (blow off).

Compressed air cooler

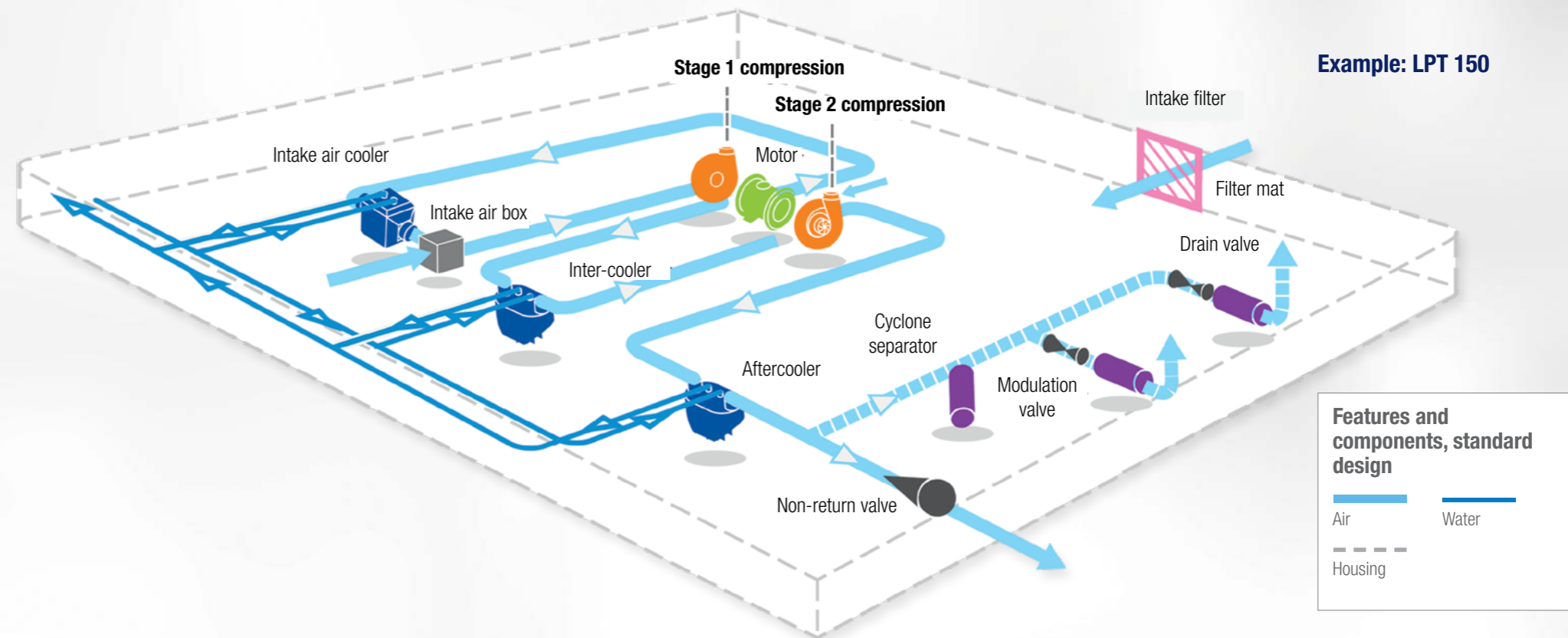
There is a compressed air cooler downstream of each airdent. It guarantees the ideal compressed air inlet temperature for the next airdent and minimises the compressed air outlet temperature at the outlet of the compressor.

Higher efficiency factor for low pressure networks

Wherever low pressures are required, the new BOGE LPT 150 (Low Pressure Turbo) is convincing with its excellent degree of efficiency. Thanks to the high energy density of its permanent magnet motor, it therefore weighs less than a third of an oil-free screw compressor. Pressures between 2 and 4 barg can thus be achieved in extremely economical conditions.

Just like the entire T series, the BOGE LPT 150 can also be converted on request so you can benefit from smart heat recovery because the technical requirements have already been taken into account during development.

For all industries with highly sensitive areas of application, as can be found in the pharmaceuticals industry, beverages and food processing or in hospitals, the T series guarantees maximum safety, top efficiency ratings and services that are perfectly adapted to your individual requirements.



Typical areas of application in the low pressure range – LPT 150



Water and waste water treatment

The LPT 150 is perfect for many large production companies that have their own treatment systems, such as fish farms, where oxygen is bubbled into the water basins with low pressure (between 2.5 and 3 barg).



Metal processing/production lines

Whether for cooling using compressed air or dispersing shavings in engine blocks and gearboxes – the LPT 150 offers the perfect requirements for the low pressures required in the metal processing industry.



Progress on a broad front

In the plastics, chemical and food industries, too, in paint shops and for glass manufacturing (archive image), completely oil-free operation is an important consideration – along with the gain in efficiency in the low pressure range.

Typical areas of application in the high pressure range – T 220



Food & Beverages

When it comes to food and beverages, high-quality, completely oil-free compressed air has no alternative because it is the best guarantee against dirt and impurities of any kind – whether chocolate or beer is produced or powder or granulate is transported.



Pharmaceutical industry

The pharmaceutical industry is the best example for the requirement of Class 0 oil-free compressed air. The highest hygiene standards are not just demanded in clean rooms – whether during packaging of medication, sorting out of rejected products or cleaning of phials.



Automotive industry

High-quality, oil-free compressed air ensures perfect painting surfaces and also plays an important role in many other production processes. During laser welding, for example, or as control air for machinery, e.g. to create a vacuum for "Pick and Place" technology.

Increased efficiency can be controlled

The focus control 2.0 machine control makes compressed air production more efficient – say goodbye to downtimes where electricity is used without generating compressed air! Our intelligent control systems consistently optimise the energy consumption and capacity utilisation of your compressors.

And thanks to BOGE connect, you can raise your compressed air management to a whole new level – from automated commissioning using a QR code to data-based efficiency optimisation.



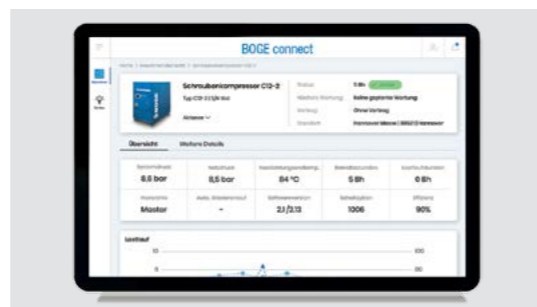
Everything at a glance: focus control 2.0

The focus 2.0 control monitors all essential compressor features, ensuring ideal efficiency. Any updates can be conveniently performed via a notebook using the serial interface or a USB stick.



BOGE connect – ready for Industry 4.0

Smart compressed air management in the age of Industry 4.0 – that is what BOGE connect has been designed for. All plant data and machine details are continuously recorded, monitored and sent to the BOGE connect portal. The data can be accessed graphically from any smart device. But most important of all: This innovative “smart service” tool allows remote monitoring of a compressed air station and helps to identify optimisation potential.



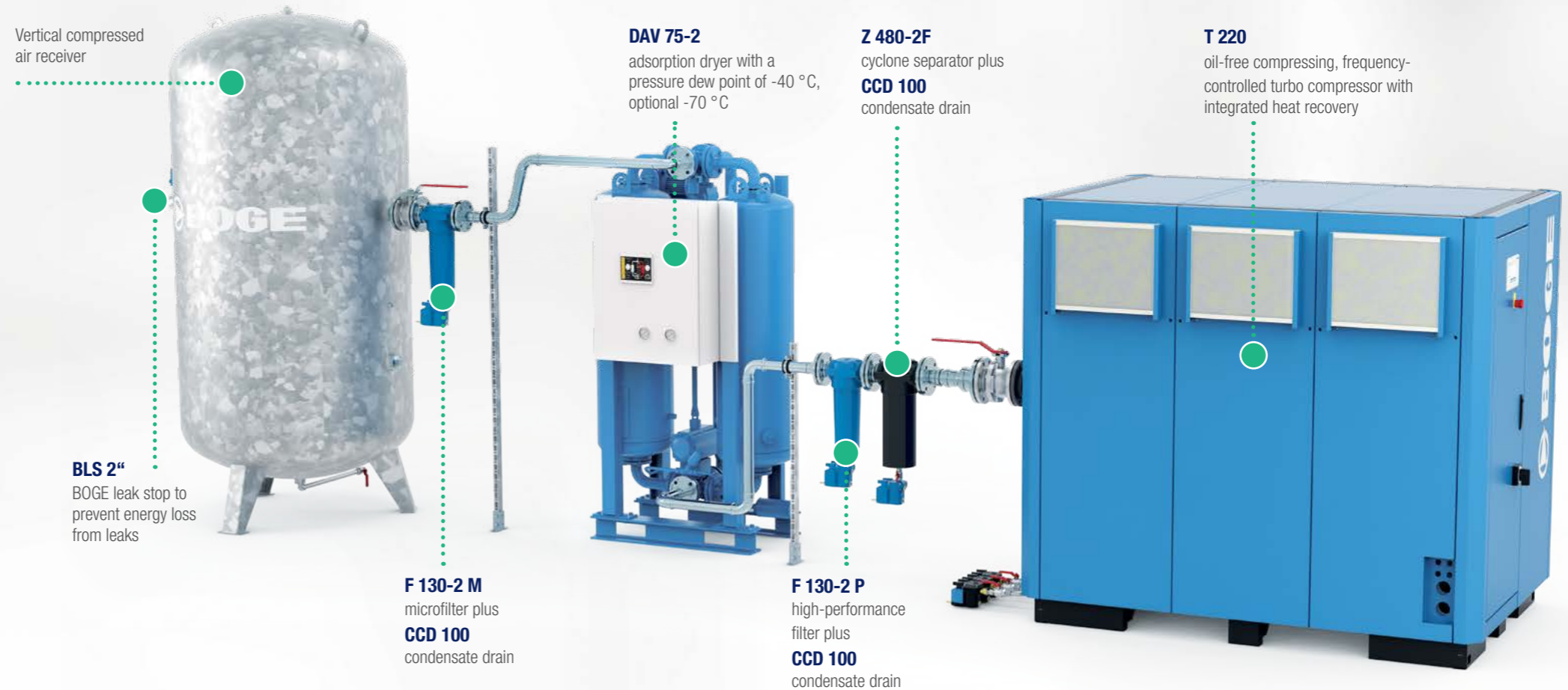
The multi-talent: airtelligence provis 3

The latest version of our smart, interlocking control will set standards for the co-ordinated operation of your compressed air system because it is compatible with an unlimited number of compressors, compressed air networks and accessory components. Its high-performance control algorithms monitor and control the entire compressed air station – predictively and consumption-dependent. The control is operated intuitively with touch and gesture commands on the 15.6” display. As a complete solution ready for connection, this control supports OPC-UA platform-independent architecture and enables an energy audit with performance tests, statement of costs and reporting (in accordance with DIN EN ISO 50001-2011), thus optimising the efficiency of your entire compressed air system – even when older compressors need to be integrated.



Personalised system solution for any requirement

No matter how high your requirements concerning compressed air purity may be – with our comprehensive range of high-quality treatment products, any conceivable area of application can be personalised to suit you. Maximum efficiency guaranteed.



The perfect team player

The combination of oil-free screw compressors, e.g. the latest BOGE SO-3 series, and the turbo compressors from the T series is the perfect solution for many applications. With top free air delivery figures, combined with the T 220, they guarantee ideal performance and high reserves.



High-performance refrigerant dryers

Applications with particularly high requirements for compressed air quality need oil-free and refrigerant-dried compressed air. BOGE's compressed air dryers minimise condensate, ensure desired savings and protect downstream components as well as the pipe network from dripping condensate. The new refrigerant is virtually climate neutral by the way.



Energy-efficient adsorption dryer

If even higher requirements are made concerning compressed air quality, BOGE's adsorption dryers are the technology of choice: They ensure that low pressure dew points are achieved and as little residual humidity as possible remains in the compressed air. In addition, they are easily accessible for service and maintenance and – thanks to their thermal insulation – particularly energy-efficient.



Exceptional expertise in gas production

We have recently brought reinforcements on board for the production of gases, such as highly purified and ultra-pure nitrogen: Since August 2023, INMATEC Gase Technologie, one of the leading manufacturers of nitrogen and oxygen generators, has been part of the BOGE family. The expanded product portfolio means that we will be able to cater to more diverse and industry-specific requests in the future. More about INMATEC products, expertise and system solutions at www.inmatec.de.



Always there for you

So you can take care of your core business without worrying, we will ensure the smooth running of your compressed air system. From technical support in emergencies to customised maintenance agreements and diagnostic tools for effective compressed air management – our services meet your specific needs precisely. Our warranty for motor/compressor units is new.

BOGE maintenance agreement including warranty for motor/compressor units Mandatory	BOGE maintenance agreement including warranty for motor/compressor units	BOGE maintenance agreement including warranty for motor/compressor units can be extended annually
BOGE no-hassle WARRANTY	BOGE no-hassle WARRANTY	
		BOGE add-on WARRANTY* can be extended annually
		5 10 11 12 13 14 years →

* Only in connection with a warranty agreement including warranty for motor/compressor units

BOGE maintenance agreement
including warranty for motor/compressor units

When purchasing a machine, signing a 5- year agreement for its maintenance is mandatory. It includes the following services provided by BOGE:

- Monitoring and, where applicable, exchange for all maintenance and parts subject to wear in accordance with manufacturer specifications
- **Warranty for motor/compressor units**
- Up to 2 maintenance tasks per year are planned. The machine's condition is regularly checked throughout the contract term with required tasks being derived.
- Online fault monitoring system ("BOGE connect"), which allows the customer access to the relevant operating data for the machine. BOGE connect is integrated into the turbo compressor as standard.
- At the end of the five years, the maintenance agreement can be renewed for another five years by both parties.
- Renewable after 10 years for one year each

"No-hassle" warranty agreement

Classic warranty agreement

- Bearing of **all** costs in the event of failure
- Contract term: 5 years
- Can be extended by another 5 years

"Add-on" warranty agreement

- In the event of failure, 70% of parts costs of the most important A parts
- Contract term: 1 year (add-on to "no hassle")
- Can be extended by 1 year

BOGE connect is included in the costs of all maintenance or warranty agreements.

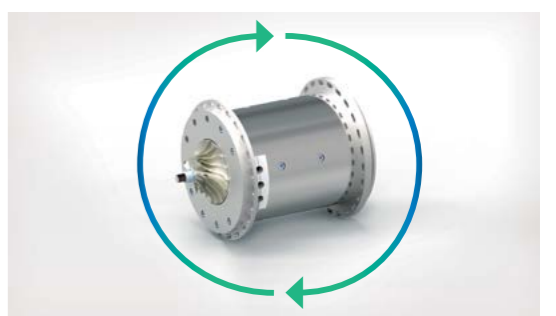
Extremely maintenance friendly

When it comes to service-friendliness in everyday operations, the new BOGE T series is perfectly equipped: the size and weight of the compressors as well as of all spare parts make handling easier – from set-up options to smaller lifting aids. All maintenance-relevant components are easily accessible and can therefore be serviced quickly and without complications.



Refurbishing – the future is sustainable

Why should a motor or compressor unit be scrapped if it can be professionally refurbished in our main plant in Bielefeld so it can serve its purpose as reliably as a new one? That is why BOGE has called the "Refurbishing" programme into life for the T series. If a replacement is required, you will receive a new or newly refurbished motor/compressor unit to reduce the CO₂ footprint of your company in the long term.



Technical support around the clock

Whether commissioning, maintenance, repair or inspection – our certified BOGE service engineers around the world are your professional port of call for all technical matters.

And if an unforeseen incident was to happen, you can rely on our technical support that is available around the clock – 24 hours per day, 7 days a week, 365 days per year.



Our expertise enables your success

In addition to our compressed air service, BOGE also runs its own

Compressed Air Academy where experienced coaches teach you market-specific content in specialist seminars or instruct you in systematic troubleshooting.

All according to the motto "From practice for practice".





Best
Of
German
Engineering

Customers in more than 120 countries worldwide trust the BOGE brand. Already in its fourth generation, this family-run company directs all its experience into developing innovative solutions and exceptionally efficient products for the compressed air industry.

