



Certification
ISO 9001
Germanischer Lloyd
Certification
Certificat No.
QS-410 HH



Powers that be: SO Series of oil-free screw compressors

Free air delivery: 39–49.4 m³/min; 1378–1746 cfm
Pressure range: 7–10 bar; 100–150 psig
Motor range: 260–330 kW; 350–450 HP



Committed to oil-free compression: Compressed air for the highest product quality

BOGE has been manufacturing compressors for over 70 years and a great experience in the construction of oil injected screw compressors.

This experience and expertise forms the basis for the modern design of the SO Series of oil-free screw compressors, where user benefits were designed in as a primary consideration.

Finely graduated gear ratios have been calculated to give you the widest choice of free air delivered outputs between 1378 and 1746 cfm, in a pressure range between 100–150 psig. Motor sizes for this oil free range vary between 350–450 HP.

The most common applications for oil-free compressors are found in the pharmaceutical, food, brewery and chemical industries, though today more and more specifiers are looking for compressed air generation without oil.

In order to generate the driest as well as cleanest possible compressed air, BOGE offers the option of an energy free adsorption dryer package, which is designed to utilize the heat of compression for media, regeneration.

All BOGE oil-free screw compressors utilize the intelligent ARS control and monitoring system which ensures the most economical and cost effective operating cycles at all times.

Imaginative design – economical operation

NEMA 4 electrical cabinet

- Robust, eye-catching design, safe in the most arduous conditions

Structured design in three clearly defined sections

- All components easily accessible

Copper-nickel, shell in tube, inter cooler and after-cooler

- Easy to clean, reduced maintenance time

ARS control and monitoring system

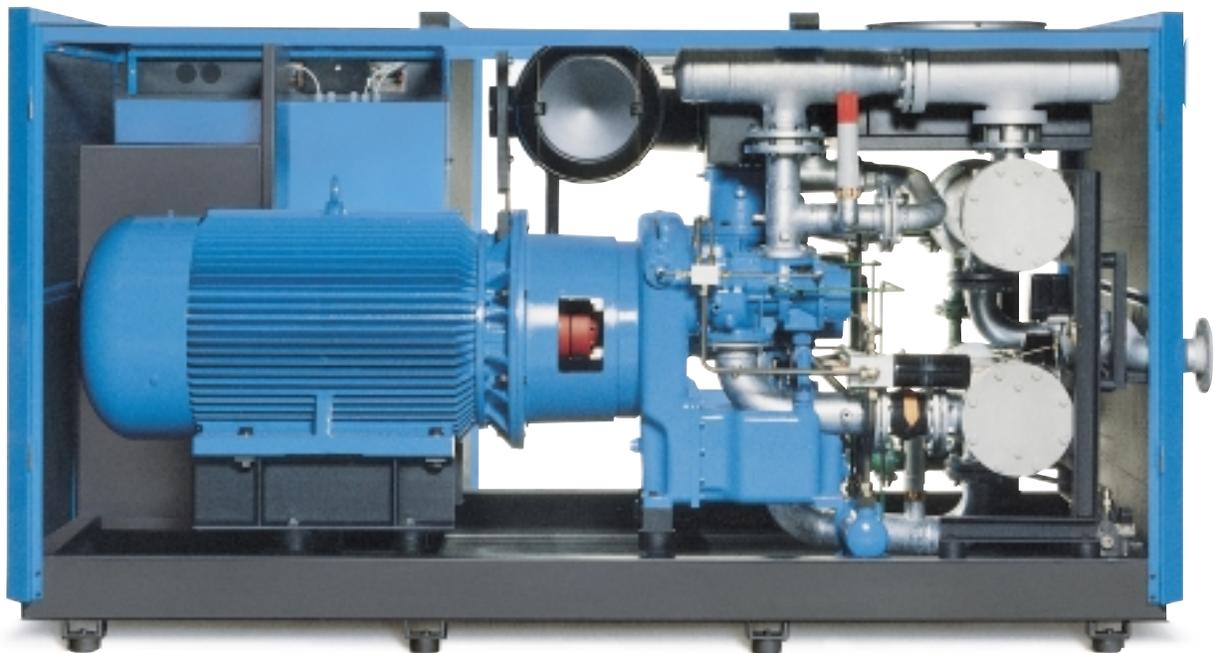
- Individual, user friendly, economical and safe.

Two stage airend

- Low specific power consumption

Optional adsorption dryer

- Energy free, dry compressed air to -22°F dewpoint



Three-phase, class F, asynchronous motor with reserves. PTC protection standard

- Located in the cool air intake end of system to extend service life

Generously dimensioned roller bearings for the most demanding operation

- 120.000 hour design life, with no inspection until 35.000 hours

Modular two-stage airend design allows either stage to be removed separately

- Maintenance friendly, time saving

Washable, nylon faced, acoustic lining made from mineral fibre

- Excellent sound pressure values

Easy airend bearing maintenance routine

- Spare or exchange airend un-necessary

Molybdenum-graphite coated airend rotors

- Practically corrosion free

The BOGE-Supertronic control system – the compressor's brain

The intelligent BOGE-Supertronic controls the compressor to produce major energy savings. It is combined with an integrated monitoring and fault indication system with clearly laid out plain text display (LCD with 4 x 20 characters). BOGE-Supertronic is an intelligent control system. It adjusts automatically to changes in operating conditions, taking into account maximum permissible switching cycles of the main drive motor as well as the dynamics of the compressed air system. It calculates the probable compressed air demand in advance, then adjusts its control behavior accordingly on the basis of specified conditions and flexibly calculates the optimum operating mode. In this way it avoids costly

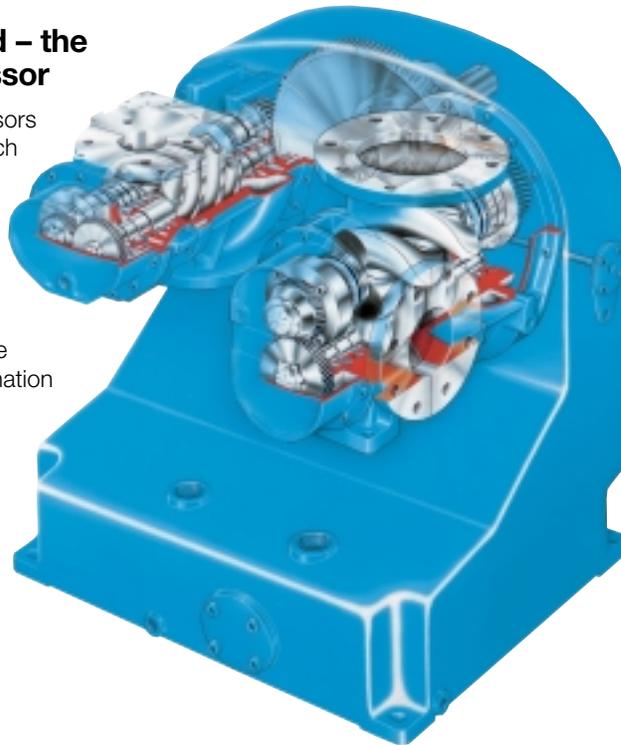


idling times and high energy costs wherever possible. The BOGE-Supertronic is equipped with 76 functions.

Half of the functions are standard as in the basic model, the remaining 38 options can be customized to individual requirements.

The two-stage airend – the heart of the compressor

All Boge SO oil-free compressors utilize a two-stage airend which guarantees very low specific power requirements. The electric motor drives a central bull gear, which simultaneously drives both stages as well as a flange mounted lubricator pump. The shafts are sealed by a combination of special sealing rings and a two-stage labyrinth vented to atmosphere. This system ensures optimum operational reliability. The compressor stages are designed for either full load or very intermittent operation.



The rotors are wear free and run without contact via synchronous gears.

The BOGE oil-free airends feature a new flanged stage concept. It means that when the maintenance schedule requires a bearing change the individual stage can quickly and easily be removed. For the operator it means maximized availability and vastly reduced maintenance costs. Furthermore it means that stocking of spare stages is a thing of the past.

The precision rotors are finished with molybdenum graphite coating, which prevents corrosion. The robust stages have a 30-load reversal per hour design specification, which means the compressor is also suitable for intermittent use.

High quality, durable and reliable airend bearings

The amply dimensioned airend roller bearings are of the highest quality and very durable giving the most reliable service life even in the most demanding operational conditions.

These special bearings eliminate the need for other more traditional means of axial thrust compensation. They have a design life of 120.000 hours, with a recommended first inspection after 35.000 hours.

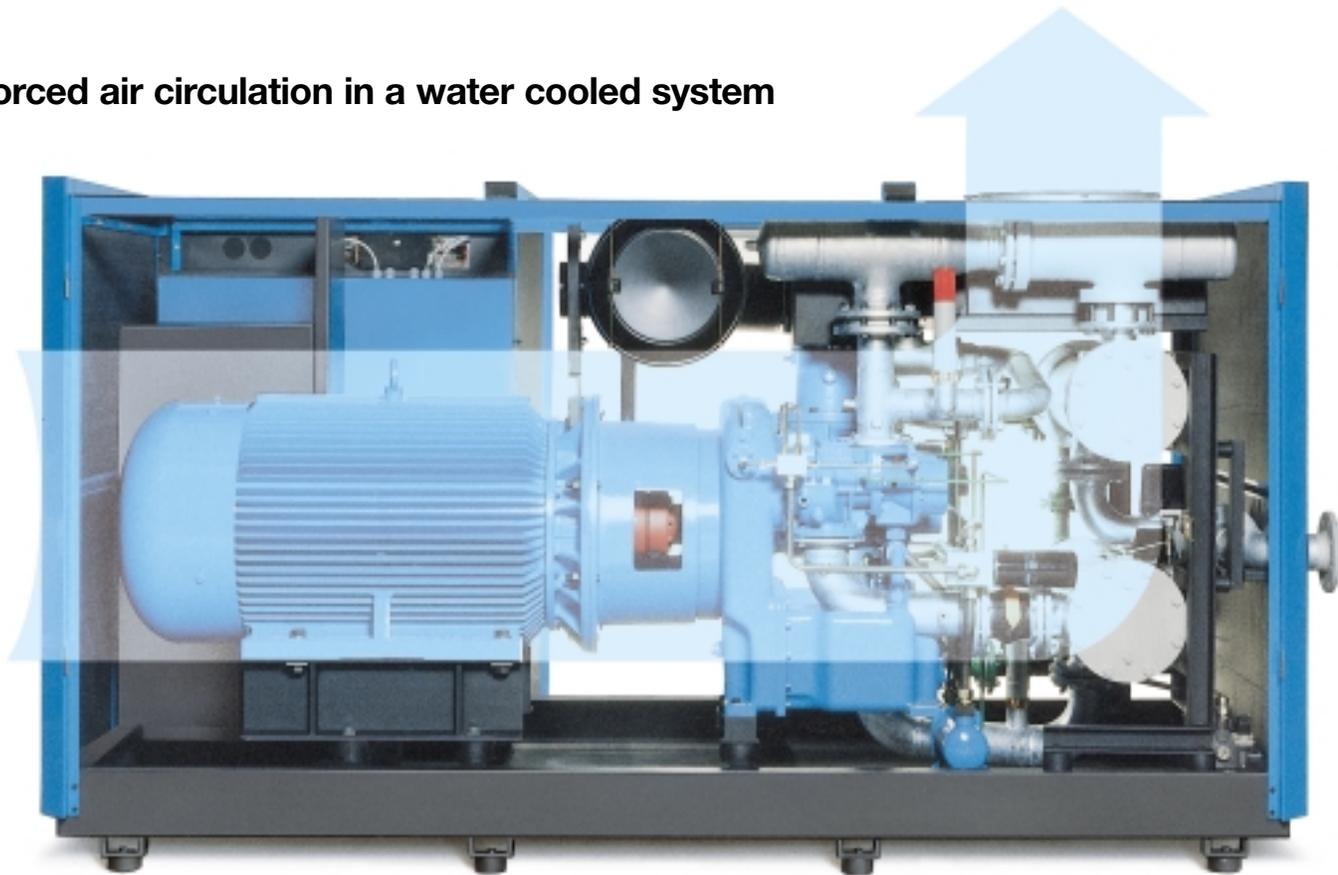


Providing the power: SO 350, SO 450

All BOGE oil-free screw compressors are manufactured to the same design concept.

They are divided into three clearly defined sections. Easy unhindered access is ensured for inspection, routine maintenance and the removal of larger components in periodic maintenance.

Forced air circulation in a water cooled system



Electrical and drive section

Compressor section

Cooling section

1. The electrical and drive section.

Control electronics, electrical components and motor are located in the coldest part of the package, which assures longer service life and greater reliability.

2. The compressor section.

Neatly laid out allowing easy access to the modular two-stage airend.

3. The cooling section.

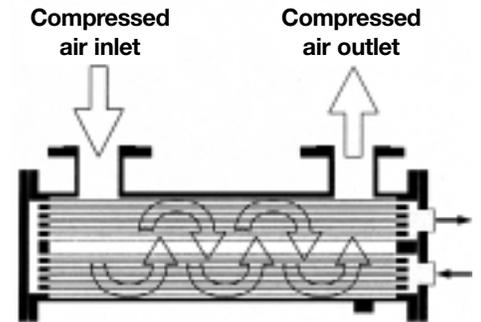
The aftercoolers are designed above each other in their own section – a very maintenance friendly concept.

The BOGE water cooling concept



BOGE use a tube in shell principal for water cooling the oil-free screw compressors. Water flows through the pipes and the compressed air around them, which means that the „dirty“ medium passes through the pipes.

- Highly efficient due to ribbed tubes (turbulence) on the compressed air side and smooth tubes on the water side.
- Easily removeable cooler packs for maintenance
- Constant flow water means no dead zones for dirt collection
- Standard copper-nickel tube material
- Tube bundles easily removed for maintenance



Cowl cooler

The cowl cooler is mounted directly on top of the compressor cabinet. This concept is made possible because a separate cooling fan is already fitted as standard.

- Eliminates the need for ducting
- Greater installation flexibility
- Heat rejection into the compressor room eliminated
- Thermostatically controlled water valves save cooling water



Closed circuit water cooling

BOGE oil-free screw compressors can be equipped with closed circuit water cooling systems if no cooling tower or fresh water supply is available. Water temperatures are constantly maintained within permissible parameters by multiple thermostatically controlled cooling fans.

- No water consumption
- No dirty water maintains cooling efficiency
- Maintenance free
- Corrosion eliminated
- Glycol additive prevents freezing pipes
- No costly water treatment

Drying oil-free compressed air

The choice of dryer depends on the final quality of compressed air required. The cost effectiveness of the dryer not only

depends on the initial capital outlay but also the lifetime running costs.



D series Refrigerant Dryers

Dewpoint of +37.4°F. Providing the ambient temperature never falls below +37.4°F and the air quality meets the production requirement then the refrigerant dryer is ideal.



DA series, heatless desiccant dryers

Dewpoints to -94°F. For drier compressed air applications then the refrigerant type. It should be considered that this type of dryer uses approximately 14.5% of the generated

compressed air to purge its towers in regeneration and this must be calculated when sizing the compressor.

DAV series, heat regenerated desiccant dryers

Dewpoints to -112°F. Heat regenerated adsorption dryers are more economical at higher flow capacities than the heatless type. The regeneration heat can be supplied by one of the following methods:

Internal regeneration uses a combination of purge air as well as an internal heater.

External regeneration uses ambient air drawn in by blowers and heated by an external heater.



DE series, heat of compression dryers

Dewpoints to -40°F. The energy efficient solution, utilizing the heat of compression from the airoend to regenerate the desiccant towers.

Energy consumption of compressed air dryers

Example

Oil-free screw compressor model SO 350

Motor output 260 kW or 350 HP

Free air delivered 1382 cfm, max. pressure 8 bar

Dryer system	Dew point under °F	Dryer capacity cfm	Regeneration air cfm	Regeneration air acc. to kW	Output / heater kW	Total output kW
Refrigerant	+ 37.4	1382	0	0	3.7	3.7
Heatless adsorption	- 40	1382	189	35.6	0	35.6
External (vacuum) regenerated adsorption	- 40	1382	0	0	18.1	18.1
Heat of compression adsorption	- 40	1382	0	0	~ 0	~ 0



Type	Max. pressure		Effective free air delivery*		Motor power Main drive motor		Fan motor		Dimensions super silenced W x D x H (in)	Compressed air outlet	Weight super silenced lbs.
	psig	bar	cfm	m ³ /min	HP	kW	HP	kW			
SO 350	100	7	1384	39.20	350	260	2.4	1.8	144 x 71 x 85	5" ANSI	13335
	115	8	1382	39.15	350	260	2.4	1.8	144 x 71 x 85	5" ANSI	13335
	125	8.6	1380	39.10	350	260	2.4	1.8	144 x 71 x 85	5" ANSI	13335
	150	10	1378	39.05	350	260	2.4	1.8	144 x 71 x 85	5" ANSI	13335
SO 450	100	7	1746	49.45	450	330	2.4	1.8	144 x 71 x 85	5" ANSI	14260
	115	8	1744	49.40	450	330	2.4	1.8	144 x 71 x 85	5" ANSI	14260
	125	8.6	1742	49.35	450	330	2.4	1.8	144 x 71 x 85	5" ANSI	14260
	150	10	1740	49.30	450	330	2.4	1.8	144 x 71 x 85	5" ANSI	14260

Emitted sound pressure level as per PN8NTC2.3, super-silenced version **80 dB(A)**

*Free air delivery of the complete system as per ISO 1217, enclosure C at 20°C ambient temperature and max. pressure.

The technical data is designed for international use. Max. ambient temperature + 40°C max. cooling water temperature + 25°C.

Different demands on request. Dimension and construction are subject to change.





BOGE COMPRESSORS Bielefeld plant.
State-of-the-art production facilities guarantee the highest manufacturing quality.



Quality. Made in Germany.



BOGE AMERICA, INC.

3145 Northwoods Parkway
Suite 400

Norcross, GA 30071

Tel. 770-448-5995

Fax. 770-448-1482

www.boge.com

usa@boge.com