



**ROBUSCH<sup>®</sup>**



# Turbo Blower



**Evolving  
Technologies**



At Robuschi, we have been providing products and services in the low pressure market for a long time. We have also supplied generations of customers worldwide with blower solutions.

We are well aware that success is a process based on a stream of innovations and on working closely with our customers. Our latest innovation comes in the form of a blower boosted by turbo technology. Now, as a customer, you have access to a full spectrum of low pressure technologies, including lobe, screw and, now turbo blowers.

You can now benefit from dealing with a single, well-established, knowledgeable supplier for every application. At Robuschi, we are able to provide the most suitable solution for your needs that combines superior efficiency, a small footprint, minimum maintenance, operating costs, long service life and low noise emission.

*Regardless of your operating needs, we have the perfect solution for your (everyday) needs.*

## Energy Efficiency is Key

Energy consumption has been a priority for a long time, but now more than ever, our customers are looking for on-going reductions in energy costs.

In wastewater treatment plants for example, energy can account for as much as 75% of the overall operation costs of the facility. Aeration systems are the largest energy user (more than 60% of the total electricity cost). Up to 75% of your compressed air costs will be spent on energy, so state-of-the-art aeration equipment can make the difference, not only to reduce your carbon footprint, but by substantially lower life cycle costs.

### Enter Turbo Power

Introducing a Turbo range of blowers can tackle energy savings concerns for customers conscious of their environmental and financial impacts (total cost of ownership).

When choosing the right technology to help you save and reduce your environmental impact, trust our Robuschi Experts to offer you the best combination of solution.





# Robox Turbo Outline

## Benefits at a glance

1. Touch Screen HMI
2. Inverter
3. PLC
4. Cooling air silencer
5. Blow-off valve and silencer
6. Air-end
7. Inlet silencer



## Innovative Design for High Efficiency

Turbo Blower technology relies on centrifugal compression which generates pressure by transforming kinetic energy (speed) into static energy (pressure). This compression is generated within the blower's air end. To control every running and safety parameter of the unit, a PLC-based controller ensures safe and sound operation. Additional core components are also present to guarantee a complete piece of mind for the product but also the operators.



## High Speed Motor and Drive for Maximum Efficiency

Another key aspect of turbo technology is the need for a high rotational speed required to reach the operating pressure level. The rotational speed is generated by a high speed motor, coupled with a high frequency drive both controlled by the PLC-based unit controller. The rotational speed together with additional parameter adjustments is ensured by the machine without the need of user intervention.

Robox Turbo is equipped with different high speed motors (**ARIM**, **CRIM** and **PMSM**) providing the highest efficiency and reliability depending on blower sizes:

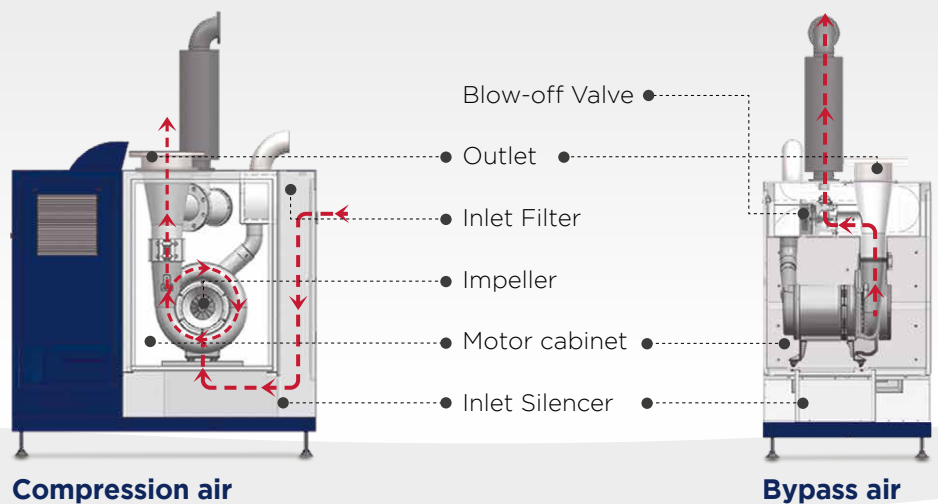
- **ARIM Aluminum Rotor Induction Motor**  
(10 Hp and 75 Hp)
- **CRIM Copper Rotor Induction Motor**  
(from 20 Hp to 50 Hp)
- **PMSM Permanent Magnet Synchronous Motor**  
(from 100 Hp to 700 Hp)

## Air End

- Compress ambient air and gas
- Centrifugal compression using impeller, diffuser and volute
- Oil free because of using air foil bearing
- Air cooling or water cooling
- High efficiency motor



## Operating Principle - Air Flow





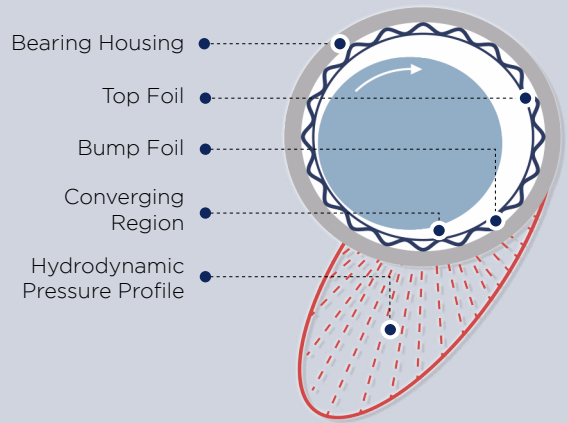
# Bearings

## Air Foil Bearing

### Air Foil Bearing benefits, include:

- Simplicity
- Reliability
- Ease of Operation and Maintenance
- Low Total Cost Ownership

The air bearing operating principle is comprised of various technologies applied in a simple way. Levitation is generated by the hydrodynamic pressure present between the rotating part (shaft) and its fixed components when the machine is running. This principle allows an almost friction-free operation, with a very high efficiency output.



## Journal Bearings

Journal bearing technology allows the system to sustain loads while mitigating the effects of operational changes. This results in temperature variation and the creation of mechanical force. The main challenge with this technology is mastering the clearance between components, which guarantees a secured operation within the operating limits of the machine.



BUMP FOIL



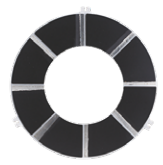
TOP FOIL

## Thrust Bearings

Thrust bearings exist to withstand axial loads generated from the machine's operation. These forces are compensated with an architecture of foils that allow the transfer and attenuation of mechanical energy. Combined with the journal bearings, operating loads are sustained and countered in all directions, protecting the technology against loads damage.



BUMP FOIL



TOP FOIL



# Robox Turbo Range



**TS 3**



**TS 6**

Robox Turbo	Power Hp		Frames	Pressure Code
<b>TS</b>	10 ÷ 700	/	1 ÷ 6	06-08-10*

- \* 06 : 600 mbar(g)
- 08 : 800 mbar(g)
- 10 : 1,000 mbar(g)

The Robox Turbo range is able to reach up to 1,000 mbar(g) with a maximum flow of 26,500 m<sup>3</sup>/h.

Our Engineers are at your disposal to size the Robox Turbo to best fit your plant. They will provide all the technical information and support as well.





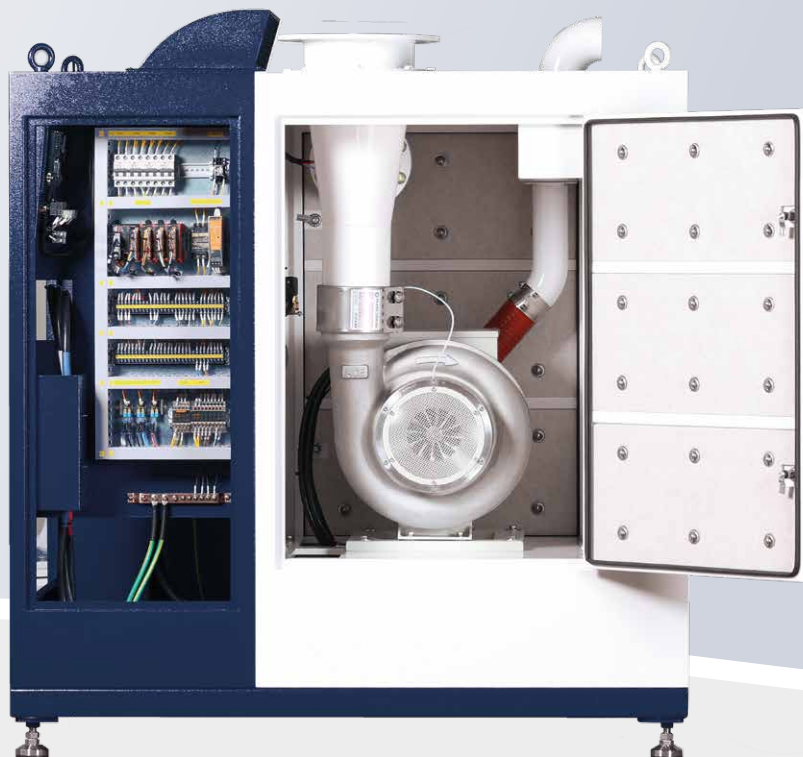
# Unique Features for Total Piece of Mind

## High Efficiency for Low Life Cycle Cost

A superior design of the Robox Turbo ensures energy savings and low lifecycle costs. Furthermore, the high-speed motor can assure high efficiency over the entire operating range.

## Compact Design for Easy Installation

The compact design of the Robox Turbo helps to reduce costs and minimize installation space.







## Unique Features for Total Piece of Mind

### Low Noise

Limited noise emission is assured by the concept design. In addition the silencers guarantee quiet running to meet the most stringent low noise regulations common in today's cities.

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### Oil Less For Any Application Requirement

The Robox Turbo is completely oil-free to meet the most rigorous of environmental standards and reduce contamination.

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### Plug & Play: Ready to be Installed

Thanks to its power electric cabinet and integrated variable frequency drive, the Robox Turbo is easy to install. All it needs is a connection to the pipework and electric power, making it virtually "plug & play"!

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### Easy and Cost-effective Maintenance

Designed for easy access to internal components. All you have to do is open its front door. Maintenance costs are at minimum thanks to the small number of machine components and their simple and robust construction.

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### Reliability

The Robox Turbo is manufactured with high quality components and carefully tested to grant a steadfast and continuous operation during the entire process.

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### Extensive Range of Options

Robox Turbo can be configured with a wide range of options and accessories to meet the customer's exacting requirements. For instance, several types of silencers are available as well as a special noise enclosure for outdoor installation. Don't hesitate to ask us for more options.

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### Wide Turndown

The Robox Turbo is able to meet a large range of demand for compressed air without wasting energy. Thanks to its integrated variable frequency drive (VFD), it maintains the highest efficiency and flexibility.

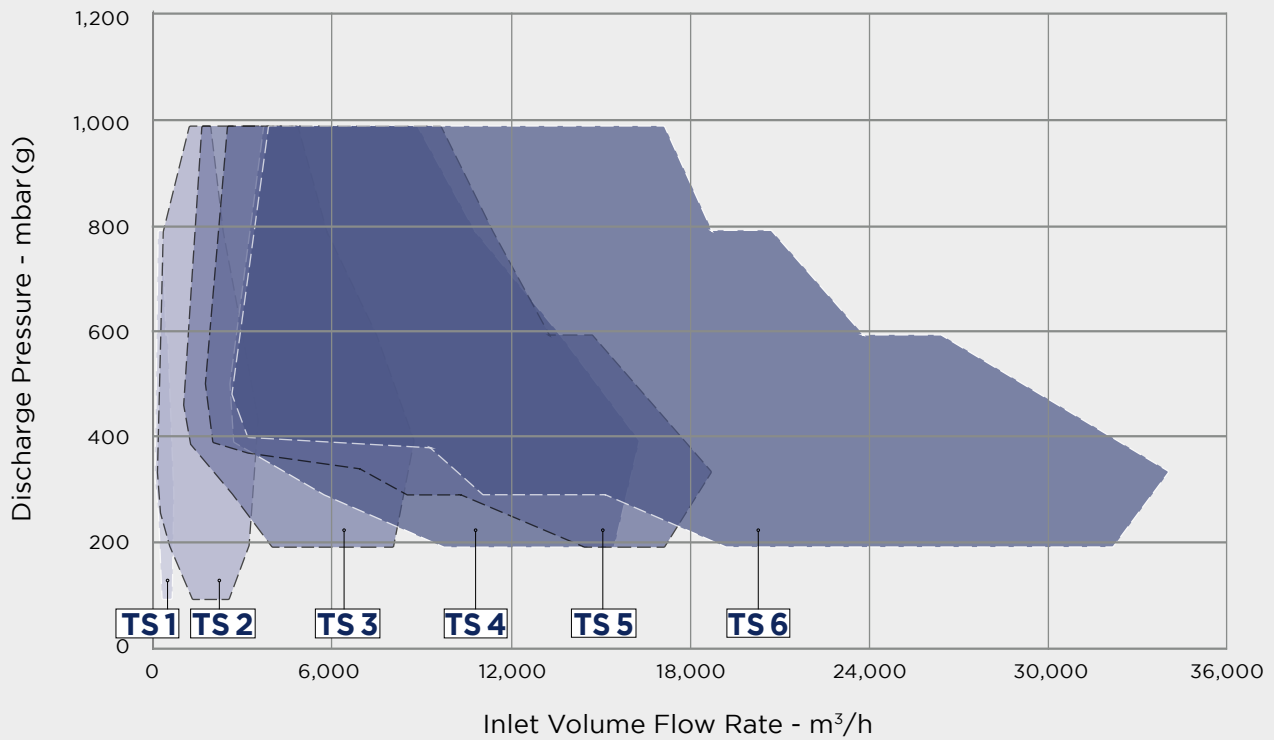
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### Innovative Controller

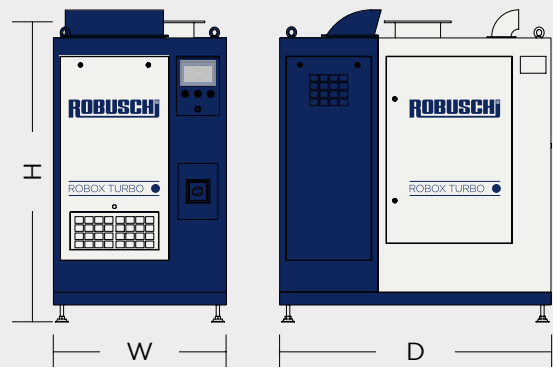
The Robox Turbo is equipped with an advanced control system that is extremely user friendly by way of an intuitive menu. The ability to monitor the Robox Turbo continuously ensures reliable operation and proactive protection. The controller manages a variety of operating modes, with the possibility of a remote connection to verify measured parameters and respond to possible alarms.

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### Performance Air Map



### Overall Dimensions



Robox Turbo Frames	POWER		W mm	D mm	H mm	Weight kg	DN
	Hp	kW					
<b>TS 1</b>	10	/ 7.4	650	650	1020	200	80
<b>TS 2</b>	20	/ 14.7	920	1450	1500	500	150
	30	/ 22.1				500	150
	50	/ 36.8				530	150
	75	/ 55.2				600	200
<b>TS 3</b>	100	/ 73.5	1020	1700	1900	870	250
	125	/ 91.9				870	250
	150	/ 110.3				900	250
	200	/ 147.1				950	300
<b>TS 4</b>	250	/ 183.9	1300	2000	1900	1400	350
	300	/ 220.6				1480	350
	350	/ 257.4				1500	350
<b>TS 5</b>	400	/ 294.2	1700	2500	2040	2200	400
<b>TS 6</b>	500	/ 367.7	1800	3500	2200	3700	500
	600	/ 441.3				3860	500
	700	/ 514.8				3900	500

# ROBUSCH®

## Robox Range to Boost Your Bottom Line



### Full Spectrum of Blowers

Positive displacement: Robox Lobe and Robox Screw  
Centrifugal: Robox Turbo

Range up to 2,500 mbar and  
flow up to 26,500 m<sup>3</sup>/h.



ROBOX   
LOBE

ROBOX   
SCREW

ROBOX   
TURBO



## Maximum uptime. Extending performance.

We provide a range of services to ensure our customers' machines are well maintained to deliver maximum performance.

We offer preventative and planned maintenance programs, genuine parts, on-site service, professional maintenance and efficient training.

Within our service portfolio, you will find different options and services needed for optimal performance, maximum uptime and operating efficiency from your Robuschi equipment.

Visit us:

[www.robuschi.com](http://www.robuschi.com)

Scan the QR code to get it more



### **GARDNER DENVER S.r.l.** **Divisione ROBUSCHI**

#### **Manufacturing facilities**

Via S. Leonardo, 71/A  
43122 Parma - Italy  
Phone: +39 0521 274 911

Filiale di Milano  
Phone: +39 02 51 62 80 65

Filiale di Padova  
Phone: +39 049 807 8260

[info.italy@gardnerdenver.com](mailto:info.italy@gardnerdenver.com)

### **GARDNER DENVER** **NEDERLAND B.V.**

Barwoutswaarder 3  
3449 Woerden  
Netherlands  
Phone: +31 348 410 150  
[robuschi-benelux@gardnerdenver.com](mailto:robuschi-benelux@gardnerdenver.com)

### **GARDNER DENVER Ltd.** **United Kingdom**

Claybrook Drive,  
Washford Industrial Estate  
Redditch, B98 0DS - UK  
Phone: +44 1527 838 200  
[sales.red@gardnerdenver.com](mailto:sales.red@gardnerdenver.com)