

ROBUSCH®

by Gardner Denver



Triple Impact **ROBOX energy** Screw Compressor



Triple Impact

**FLEXIBLE
LOW MAINTENANCE
EFFICIENT**



30%

Cost Reduction through Superior Pump Technology

The new ROBOX energy screw compressor will have a substantial impact on your energy bill. We combine the technological advantages of our screw compressor and permanent magnet motor with Robuschi's Smart Process Control programme to halve your energy costs. Additionally, the small footprint and compact size of the new machine can free up space in the blower/compressor room.

Energy savings of up to 30% compared to rotary lobes will substantially reduce the total costs of ownership for your compressor / blower. A permanent magnet motor is at the core of this game changing technology.



WEB ENABLED



COMPACT



SMART

30%

Cost Reduction through Smart Process Control

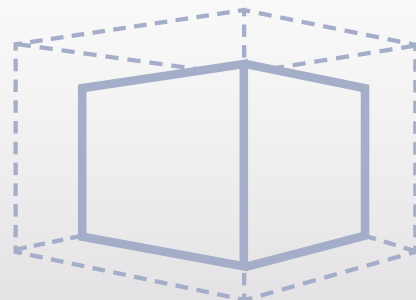
Robuschi's expert engineers will analyse the different applications in your wastewater plant and through using Smart Process Control assist you in setting up the compressors so as to provide just the right amount of air needed at different steps of a process.



30%

Reduction in Space and Footprint

With its compact layout that reduces the space requirements by 30 %, the ROBOX has been designed to fit into even the most challenging conditions. Should you revamp your existing machines space will not be an issue.





Gardner Denver has won the prestigious Environmental and Energy Efficiency award for its ROBOX energy screw compressor, at this year's Motion Control Industry Awards 2017.

Reduce Your Energy Costs

For wastewater treatment plants, energy costs can account for as much as 30% of the overall operation costs of the facility. Aeration systems are the largest energy user in wastewater treatment plants (more than 40% of the total electricity cost), so improvements in efficiency can significantly reduce energy costs.

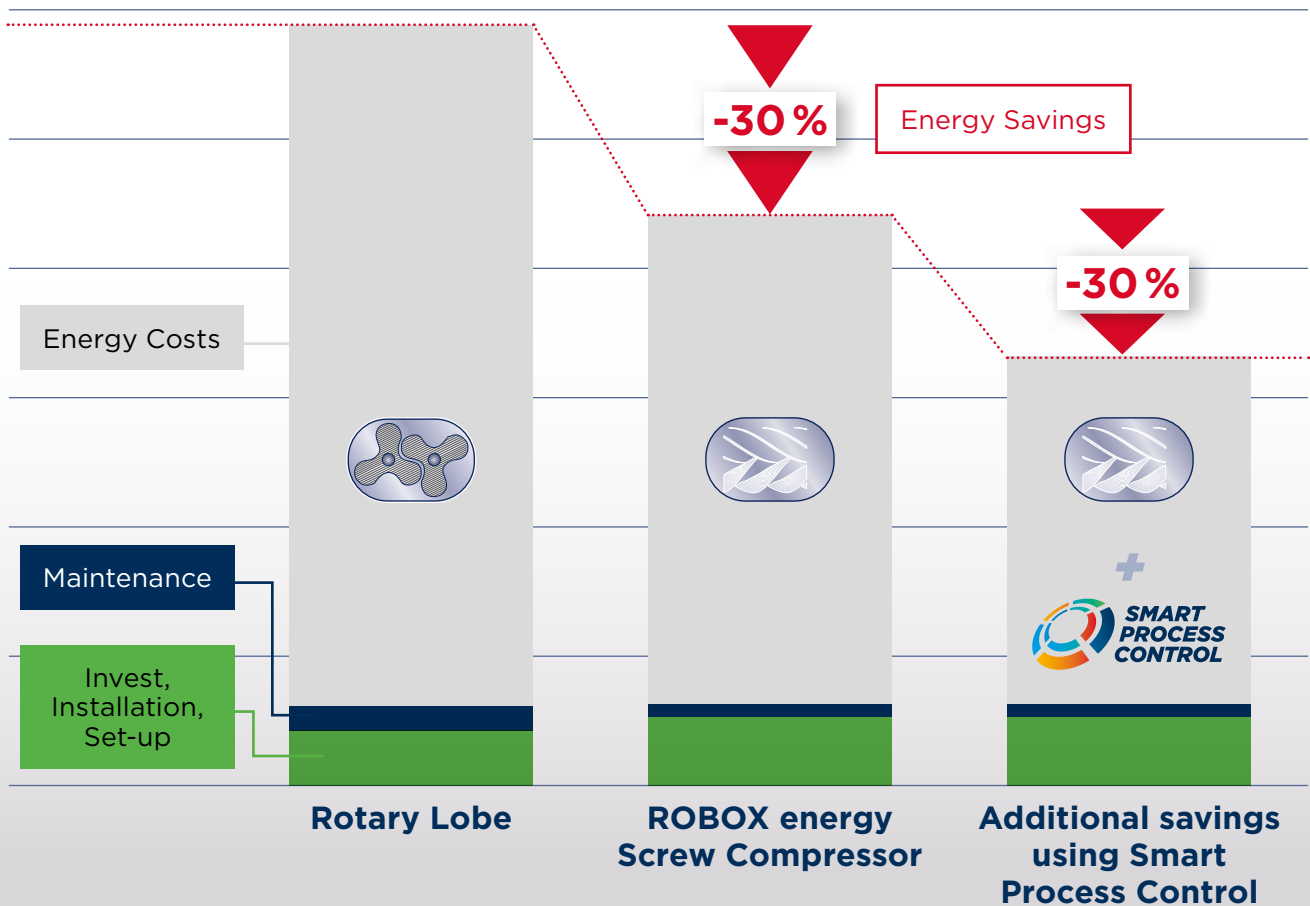
90% of your compressed air costs will be spent on energy, so state-of-the-art aeration equipment can make all the difference, not only to reduce your carbon footprint, but to substantially lower life cycle costs.

Choosing the Right Technology

Typically wastewater plants use rotary lobe, turbo and screw technology equipment for their vacuum and pressure applications. Robuschi has taken the route of the enhanced screw compressor with permanent magnet motor because of its superior flexibility.

COMPARING TOTAL COST OF OWNERSHIP

Total Cost of Ownership over 10 Years

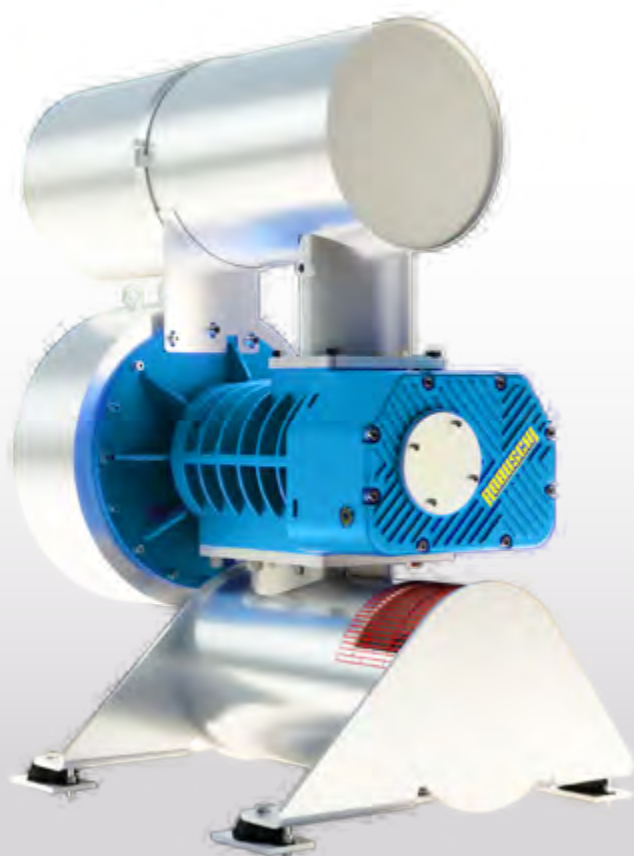


READY FOR THE FUTURE

Energy Efficient

The maximum output of the internal compression in the patented combination of the RSW core compressor with a permanent magnet motor directly fitted onto the conductor shaft, prevents any potential loss of power coming from the belt drive.

Permanent
Magnet Motor
with **5-year**
warranty



The screw technology in itself is approximately 30% more efficient than solutions available on the market. The exact savings depend on the application and the conditions under which they are run.

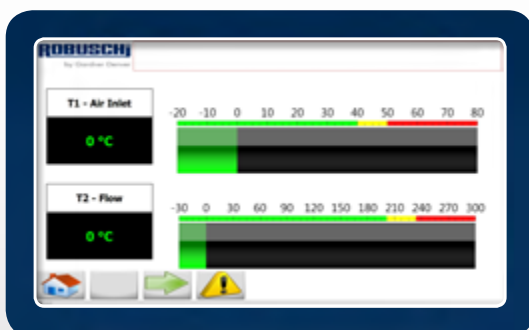
The up and down turn capacity required by wastewater treatment processes can best be handled using the ROBOX energy screw compressor. Thanks to the combination of the permanent magnetic motor and the integrated frequency converter it is able to perform at high efficiency even when operating at lower speed. This means that the motor can reach an efficiency level which surpasses the IE4 standard.



Smart and Flexible

The ROBOX energy screw compressor is equipped with a new latest generation (HMI) “touch screen” control panel. It is user-friendly with an intuitive menu, easy to program thanks to the well-known Windows CE system and can be remotely connected. Parameter control is straightforward through an Ethernet cable or via the web, which makes it possible to continuously monitor machine operation from anywhere. Remote diagnostics and predictive maintenance additionally help reduce downtime.

The flexibility and versatility of the new ROBOX compressor is masterminded by Robuschi’s Smart Process Control tool. It analyzes and applies the oxygen data received directly from the process and adjusts the operating parameters accordingly without interrupting the process. Robuschi’s engineering experts will assist customers in evaluating their applications and set in place best practices. Important energy savings can be expected from this approach which makes sure that only the exact amount of air is supplied for each step in your process.





Simple and Compact

ROBOX energy with its innovative compact design is the best solution when space is limited in the compressor room. Compared to a screw package equipped with frequency converter it needs 30 % less space.

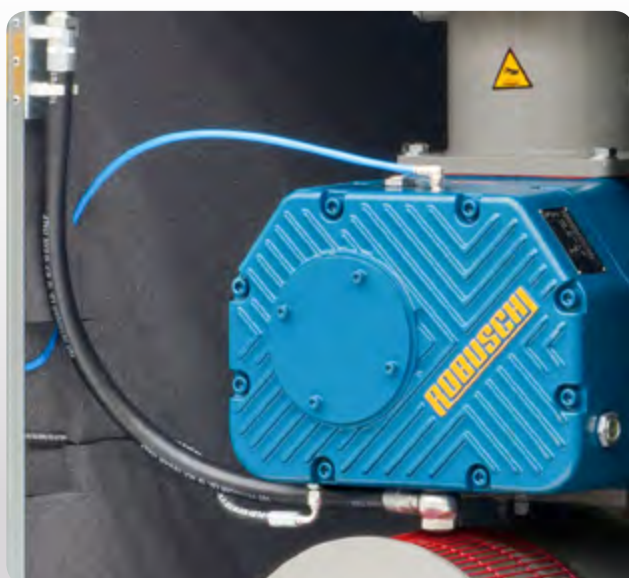
The lean layout with the permanent magnet motor built up with just stator and rotor and the direct assembly on the compressor shaft along with its wear-free design make the ROBOX energy a cost-saving, low-maintenance compressor.

Thanks to its electric supply board and integrated variable frequency drive, ROBOX energy comes ready to be installed. It just needs to be connected to the piping, electrical power and control system: Plug & Play !

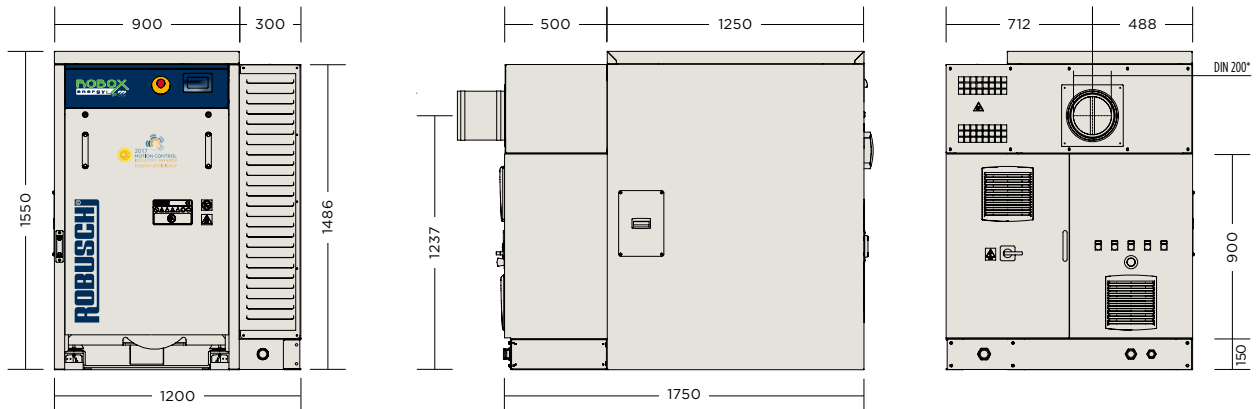
As the electric cabinet comes equipped with a forced cooling it allows reliable and safe operation even in the warmest environment. The electric cabinet has a smart layout with easy access and simple diagnostics. Additionally, it is possible to install the variable speed drive supply board separately which makes it even more flexible.

Maintenance costs are at minimum thanks to the small number of machine components (no need to grease drive belt or motor) and their simple and robust construction.

- Easy oil service
- Splash lubrication system is simple and compact, with minimum maintenance
- Main package filter can be replaced without having to open the enclosure



Overall dimensions

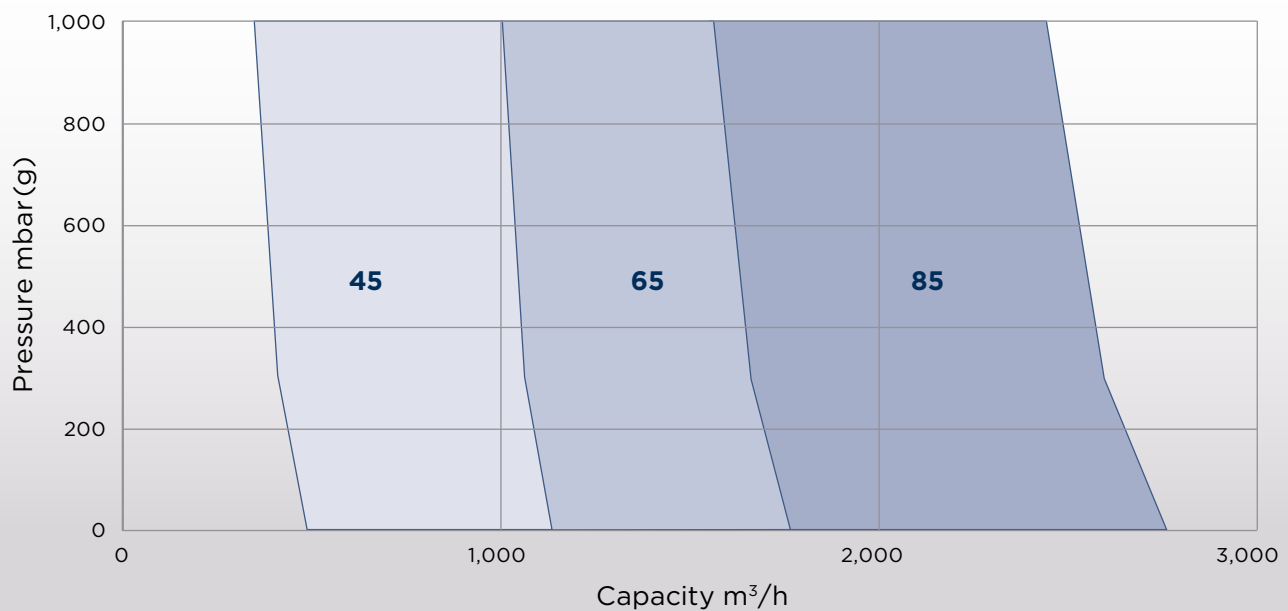


* DN 200 for WS 65 and WS 85
DN 100 for WS 45

Performances

ROBOX energy Lp WS/MD Size	Capacity max m ³ /h	Motor max kW
45	1,050	37
65	1,680	55
85	2,600	85

Air Map





Improving air generation for the oxidization tank in a major wastewater treatment system

Client

The Iren Group

Location

Emilia area at Ireti, Italy

Application

Refurbishment of the Emilia area wastewater treatment system

Product

Permanent magnet screw
ROBOX energy WS 85

Customer Benefits

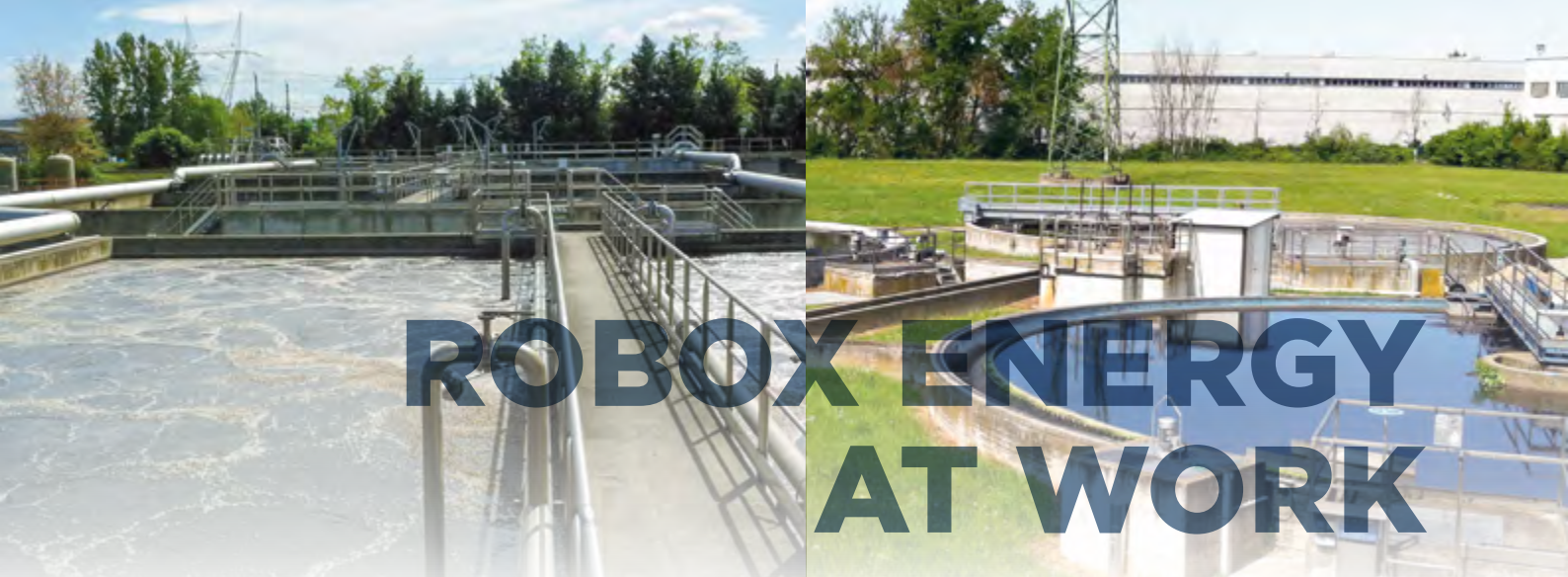
Exceptional flexibility from the WS 85 solution allowed for calibration to specific working conditions and unlike competitors, is able to be switched on and off as required. The Iren PLC also transforms it into a controller that adjusts the process parameters as required. Additionally, the ROBOX energy WS 85 analyzes and applies the oxygen data received directly from the process.

“We can report that the new logic resulting from the Iren control system has delivered a 30% reduction in the tank’s electricity consumption. Furthermore, by installing the WS 85 we’ve secured a further reduction of 20% in air generation and a total of energy saving of 50%.” – Head of Wastewater Treatment in the Emilia area at Ireti, part of the Iren Group.

Further Advantages

With the excellent energy efficiency improvement embedded in their operations, Iren Group can request TEE recognition (energy efficiency or “white” certificates), both for the logic and for the machines introduced.





ROBOX ENERGY AT WORK

ROBOX energy helps a regional wastewater treatment plant to achieve maximum efficiency and excellent energy savings

Client

Provincia Autonoma di Trento

Location

Dimaro and Commezzadura in the Alta Val di Sole valley, Italy

Application

Oxidation plant for the biological treatment of the public sewerage system

Product

Permanent magnet screw
ROBOX energy WS 65 Product

Customer Benefits

One of ROBOX energy's most interesting features is its versatility. Its Smart Process Control analyses process data and modifies the machine's operation to match the varying oxygen supply required throughout the day. This feature, made possible by the integrated inverter, prevents the on-off alternation that would decrease plant efficiency. In addition, it prevents peaks in oxygen flow, thus improving the quality of the wastewater treatment.

"We've recorded an efficiency yield variance of up to 25% between the new ROBOX energy and the lobe blower ROBOX evolution. However, when compared to the ROBOX screw compressor, the difference in efficiency reaches 9%. In addition, we have established an enduring relationship with Robuschi and should any issue arise we know we can always rely on their



technicians to give us any support we need. Both the quality of the technology and the savings are important, but the excellent after-sales support and collaboration are fundamentally important to our success."

– Production Warehouse Manager of Provincia Autonoma di Trento wastewater treatment plants.

Further Advantages

These developments are driven not only by ethical standpoint but also by tangible economic advantages. Saving on energy costs releases more money to spend on other aspects of plant management, and as such, the advances at the Dimaro plant demonstrate how technology such as ROBOX energy can play a leading role.

ROBOX energy: A Game-Changing Screw Compressor !



Energy Efficient

- Up to 30% cut in energy costs
- Government funds available in most EU countries
- Confirmed savings by real customers

Simple and Compact

- Plug & Play
- 30% reduction in footprint and size
- Easy to maintain
- Permanent magnet motor with 5-year warranty

Smart and Flexible

- Smart Process Control can add additional energy savings of 20 to 30 %
- Intelligent connectivity
- Remote web enabled diagnostics

• Ready for the Future

- Energy efficiency better than IE4
- Ahead of Eco Design demands
- Industry 4.0 and IoT enabled
- Sustainable

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

Manufacturing facilities

Via S. Leonardo, 71/A
43122 Parma - Italy
Phone +39 052 127 4911
info.italy@gardnerdenver.com

www.robuschi.com

GARDNER DENVER **Industrial Group**

Head Office

222 East Erie Street,
Milwaukee (WI) 53202
USA
Phone +1 414 212 4700

www.gardnerdenver.com/Industrials

GARDNER DENVER Ltd. **United Kingdom**

Claybrook Drive,
Washford Industrial Estate
Redditch, B98 0DS
Phone +44 152 783 8200
sales.red@gardnerdenver.com

ROBUSCHI Benelux BV **Netherlands**

Kanaaldijk 100
6956 AX Spankeren
Netherlands
Phone +31 313 415 570
roboschi-benelux@gardnerdenver.com