



Sanitaire TurboMAX turbo blower



SANITAIRE

a xylem brand

Better Than Your Traditional Blower

In a typical wastewater treatment plant, the blowers in an aeration system are the single highest energy consumer; however the most common established blower technologies are inefficient. Additionally they can be complicated to install and operate and maintenance intensive. The Sanitaire TurboMAX turbo blower - a direct-driven, high speed, turbo blower using the latest air foil bearing technology - has equal or better efficiency than most other blowers on the market and is simple to install with minimal service requirements.

What is a high speed turbo blower?

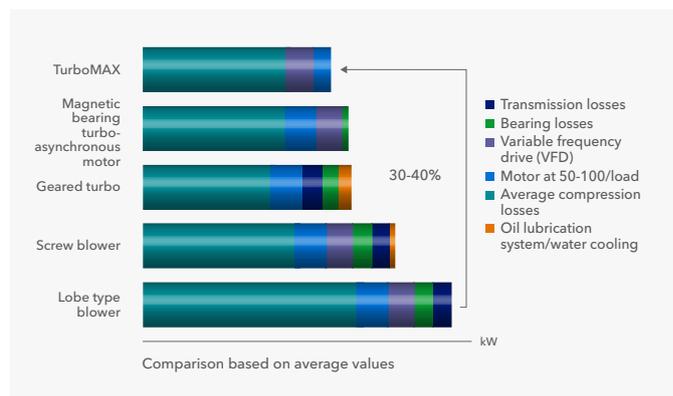
High speed turbo blowers use a direct-coupled impeller that is directly connected to a permanent magnet synchronous motor operated by a variable frequency drive (VFD) for reaching higher speeds and at the same time enabling flow control. It's a single stage, centrifugal-type turbo blower consisting of state-of-the-art air bearings of bump type, a high precision, aluminum alloy impeller, a high speed permanent magnet motor, an inverter, and a premium controller.

The rotating drive assembly is designed to be light weight and utilizes higher speeds for its operating area providing stable operation and high bearing stability also at surge.

The Sanitaire TurboMAX turbo blower range covers 13 different blower sizes (15-600 kW) and **flow rates of 700 to 41,000 m³/hr per blower**, satisfying

oxygen demands for plants **5000-15M PE** and above. This wide range of models allows for more flexibility in designing a system to more accurately meet your needs without over or under-sizing the blowers.

Mechanical and blowers compression losses comparison



THE CORE DRIVE UNIT

- 5-axis, CNC-milled impeller originating from a single aluminum forging
- Turndown capabilities from 100% to 40% at constant pressure with high surge margin and wide flow range allow for greater surge stability
- Integrated blow-off valve

COOLING

- Patented motor cooling fan, integral to the motor rotor, directs air over the motor stator and rotor, cooling the unit (air cooling <MAX300 (250)kW)
- Patented motor cooling fan and self-circulating closed loop cooling system that directs air and liquid through the motor stator and rotor, cooling the unit (water cooling >MAX400 (300)kW)



TurboMAX turbo blower features

- ✓ Highly energy efficient permanent magnet synchronous, high speed motor with accurate speed control
- ✓ Low noise and environmentally friendly - no vibration or need for oil lubrication thanks to non-contact air bearings
- ✓ Simple plug-and-play installation - no need for extra lifting devices, special foundations or time-consuming alignment procedures; compressor tested and ready to use after local adaption and startup procedures
- ✓ Minimal maintenance - rotating shaft is levitating during operation
- ✓ Quick and convenient service - modular design and small foot print with easy access points
- ✓ Zero power transmission loss and no bearing losses - direct coupled impeller on motor shaft
- ✓ No need for sensitive electronics to control the bearing functionality or any need for power backups - fail-safe technology and safe handling of power outages or fluctuating voltages
- ✓ Safe isolation during service or inspection - lockable, integrated circuit breaker
- ✓ Easy to operate - controllers are intuitive and offer a convenient user interface that supports various operation modes
- ✓ Real-time flow measurement - venturi-type flow meter at the suction side bell mouth with an accuracy of $\pm 3\%$; the integrated air flow meter means no need for separate, costly air flow meters



INTEGRAL BLOWER CONTROLS

- Based on Siemens S7 PLC
- Local control touch screen panel
- Integrated into the front of the blower
- Supports MODBUS, Profibus, Ethernet
- Controls to protect against a surge
- Built-in control modes of constant flow, power, speed and pressure or proportional mode
- Real-time performance monitoring
- Alarm and fault monitoring with history
- Filter pressure loss monitoring
- Integrated Vacon VFD with coted electrical circuit boards
- Built-in lockable main power switch MCB
- Option to separate electrical components from the main enclosure

Product Options and Installation Accessories

Standard package

- Single stage centrifugal blower
- Integrated VFD
- Blow-off valve with silencer
- Permanent magnet synchronous, high speed motor
- Siemens controller
- Standard operation modes
- Flow mode
- DO mode
- Pressure mode
- Proportional mode

Sound/Noise

Sound enclosure provided as standard with low sound pressure level (74-85dB at 1 meter 15-375kW) depending on size (larger sizes on request). Standard according to ISO 3744:1994.

Optional

- Check valve
- Expansion joint
- Discharge silencer
- Shut off valve
- Harmonic filter
- AC reactor
- Outdoor enclosure IP53
- Hot climate version with separate control cabinet (Max 10m)
- Intermittent operation/idle mode

Approvals and Standards

- CE
- Wimes
- Performance according to ISO 5389 or PTC10



Expertise you can trust. We guarantee it.

Xylem's unique understanding of the impacts of the aeration and blower design, along with the submersible mixer selection and its impact on the aeration design, allows us to design a biological treatment solution to meet your demands for both energy efficiency and process stability. Additionally, with the use of our leading CFD modeling capabilities with real, validated, mathematical models, we can design state-of-the-art aeration systems that leverage Xylem's process and equipment knowledge.



For more information please contact your local Xylem office.



www.xyleminc.com/treatment