Spencer Power Mizer multistage centrifugal blowers provide high efficiency air delivery for water and wastewater treatment applications such as sewage aeration, odor control, grit chamber aeration, channel aeration and filter backwash.

**Cast components with low operating sound levels**

The inlet section, return channels and discharge section of Power Mizer blowers are gray cast iron with excellent strength, chemical resistance and sound attenuation.

![Cast aluminum impeller.](image)

The rotor assembly of Power Mizer blowers in Series 4000 through Series 7000 contains cast aluminum impellers (shown above). Their three-dimensional blades transfer energy to the airstream with very high efficiency. Blade configurations include radial, backswept and combinations of both, selected by Spencer engineers using specialized computer software.

**Superior aerodynamics**

The air handling components of these blowers were designed in the Spencer Development Laboratory. By avoiding abrupt velocity changes that create turbulence and waste energy, Spencer engineers achieved smoother, more energy-efficient airflow from blower inlet to discharge.

Uniquely shaped impellers, return channels with airfoil-shaped vanes, redesigned inlet and discharge passages and vane-less diffusers all contribute to a peak adiabatic efficiency that is above 80%.

**Precisely balanced rotors**

Spencer’s exacting balancing procedures produce an overall vibration level of .19 in/sec or less for Series 2500 to 7000; and .23 in/sec or less for Series 8000 – the best in the industry. This decreases bearing stress, which improves bearing life and blower reliability.

**Year-in, year-out savings**

Power Mizer blowers offer long-term power savings of tens of thousands of dollars per blower per year. And you can often downsize the motor to save even more!

**EXAMPLE 1**

\[
38 \times .746 = 28.348 \text{ kW saved}
\]

\[
28.348 \times 24 \times 365 \text{ (continuous annual operation)} = 248,328 \text{ kWh}
\]

\[
248,328 \times .10/\text{kWh} \times \text{(local utility cost)} = $24,832
\]

Motor efficiency of 95% yields an actual savings of $26,139 on an annual basis.

*Assumes savings of 38 HP for one blower.

**EXAMPLE 2**

A New England WWT utility replaced five positive displacement aeration blowers (aggregate 450 HP, 3500 SCFM) with three Power Mizer blowers (each 190 HP, 4000 SCFM). Even with only one blower running at a time, the customer saves $7,000 per month in power bills and expects the blowers to pay for themselves in four years or less.
The Power Mizer Series 5000 blower is part of a high efficiency aeration system controlling dissolved oxygen in activated sludge lagoons at a New England WWT facility. The complete air delivery system was designed and furnished by Spencer, including PLCs, variable frequency drives, DO control logic, operator interface, modern communication software, and blower protection devices.

**Inlet and Discharge Flanges** – Drilled and tapped to ANSI B16.5 125#/150# standards; positioning can be vertical or horizontal (left to right).

**Balance Piston (Series 7000 and 8000)** – Equipped on larger models, it is designed to lessen the thrust load to protect the bearings from overloading.

**Bearing Housing Cooling Fan (Series 8000)** – Optional feature to significantly reduce discharge bearing temperatures.

**Base Design** – Structural steel base design. Optional API design bases are available.

**Shaft Seals** – Depending upon intended blower use, either aluminum labyrinth seals or carbon ring seals are provided.

**Bearings** – Rotor assembly supported at both ends by outboard bearings designed for minimum L-10 life of 100,000 hours.

**Motor** – Horsepower requirements are available up to 3700 BHP at standard conditions.

**Impellers** – Cast aluminum alloy impellers with varying combinations of radial and backward curved blades available to attain desired performance ratings.

**External Tie Rod** – Steel rods hold return section securely between inlet and discharge.

**Inlet Section, Discharge Section and Return Channels** – Cast iron class 30.

**Inlet and Discharge Flanges** – Drilled and tapped to ANSI B16.5 125#/150# standards; positioning can be vertical or horizontal (left to right).

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**Power Mizer Blower Features**

- **Shaft Seals**
- **Bearings**
- **Motor**
- **Impellers**

**Product Range**

<table>
<thead>
<tr>
<th>Seven Power Mizer series with two to ten stages per blower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure to 28 psig; volume to 35,000 icfm; power to 3700 bhp</td>
</tr>
<tr>
<td>Oil lubrication is available on all series while grease lubrication is also available for Series 2500 and 3500</td>
</tr>
</tbody>
</table>

You can save only once on the purchase price, but you’ll save continuously with a Power Mizer high efficiency blower!
Over a century of experience

After devoting more than 100 years to air and gas handling equipment, The Spencer Turbine Company is respected worldwide for its quality products and value-added services.

Sales and technical support

Besides direct sales offices, Spencer has manufacturers’ representatives covering all of North America and other agents around the globe. Altogether, Spencer has the industry’s largest sales organization for on-site assistance with system design and product selection.

Intelligent air delivery systems with advanced aeration technology

Spencer can furnish complete aeration air delivery systems that are process-optimized, energy-efficient and totally integrated. A typical system starts with Power Mizer blowers and adds:

- Dissolved oxygen control systems including PLCs programmed with Spencer’s unique direct airflow control logic
- Variable frequency drives with automatic speed adjustment in response to DO changes
- Motor control centers
- Blower protection panels
- Activated sludge diffusion systems
- Aeration control system engineering

Accessories

- Standard and custom electrical control panels, UL and CUL Listed controls
- Valves and silencers
- Gauges and instruments
- Tubing and fittings of steel, stainless steel, galvanized steel and aluminum

Additional WWT Facility Products

- AyrJet® high speed turbo blowers for efficient air delivery
- Fabricated multistage centrifugal blowers for aeration and incineration
- Hermetically sealed gas boosters and skid packages for digester gas
- Single-stage scroll blowers for compost and odor control

Services

- Custom designs
- Testing and applications laboratory
- Spare parts supply
- In-house and field service for all Spencer products

For product selection assistance, please email marketing@spencer-air.com or visit our website at www.spencerturbine.com to locate the Spencer representative in your area.