

**Spencer**®

**Power Mizer**®  
Energy Efficient Blowers



**Your Air Source for Mining  
Flotation Cell Applications**

### Achieve maximum ore recovery with Spencer's unique engineering edge

Whether the ore being mined is a ferrous or non-ferrous metal such as copper, lead, molybdenum, nickel, silver, zinc, gold or tin, the air in the flotation cell needs to move at the right velocity and pressure to maximize recovery. The source of this crucial air movement is the blower, which needs to stand up to demanding operations and environments.

Spencer Power Mizer® multistage cast iron centrifugal blowers are designed to meet these requirements. Made of rugged cast iron components, with uniquely shaped impellers, these reliable blowers deliver peak adiabatic efficiency up to 80%, and are preferred in mining flotation cell applications around the world.

### Optimize collisions between minerals and bubbles

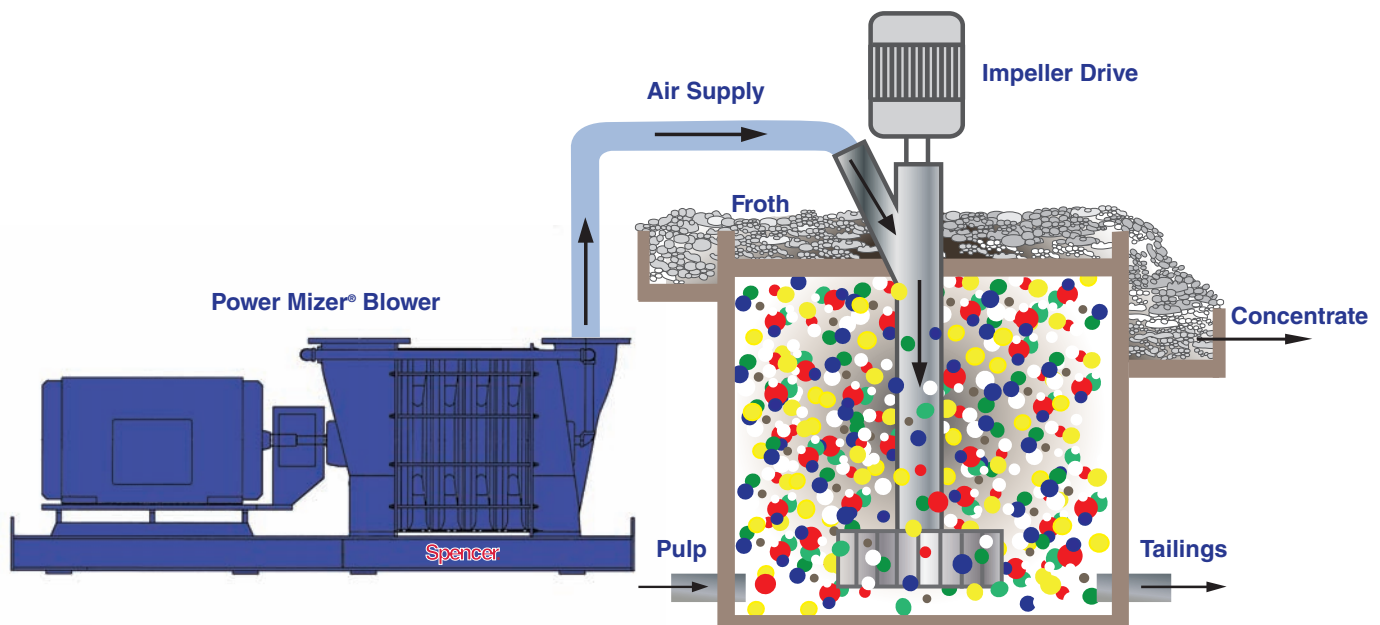
As collectors chemically bond on a hydrophobic mineral surface and increase the natural hydrophobicity of the surface, the separation process of the particles begins. That is where energy efficient air handling is so important. It is also where Spencer comes in.

In mining applications, Spencer's Power Mizer multistage centrifugal blowers supply forced air to generate the small air bubbles that attach to conditioned ore particles and float them to the surface of the cell. Valuable minerals are separated from each other and the otherwise nonvaluable ore materials.

The company's technical expertise has developed technology that avoids abrupt

velocity changes that create turbulence. Air is sheared into bubbles with optimum radius and velocity resulting in the highest quality cell performance at any operating altitude. There is a smoother, more efficient airflow in the flotation cell, so the size and velocity of the bubbles is optimized -- without wasting energy.

The effectiveness and efficiency of the flotation process is furthered as Power Mizer blowers deliver clean, oil-free, non-pulsating air to the cell.



### Performance for a broad range of flow rates and cell sizes

Spencer has served as a key part of customers' froth flotation processes in cells of all sizes. Innovative engineering in the method Power Mizer blowers use to handle air at the intake valve results in superior energy efficiency. Controlling flow by throttling air at the blower intake means less power is needed to manage the flow as it moves into the cell.

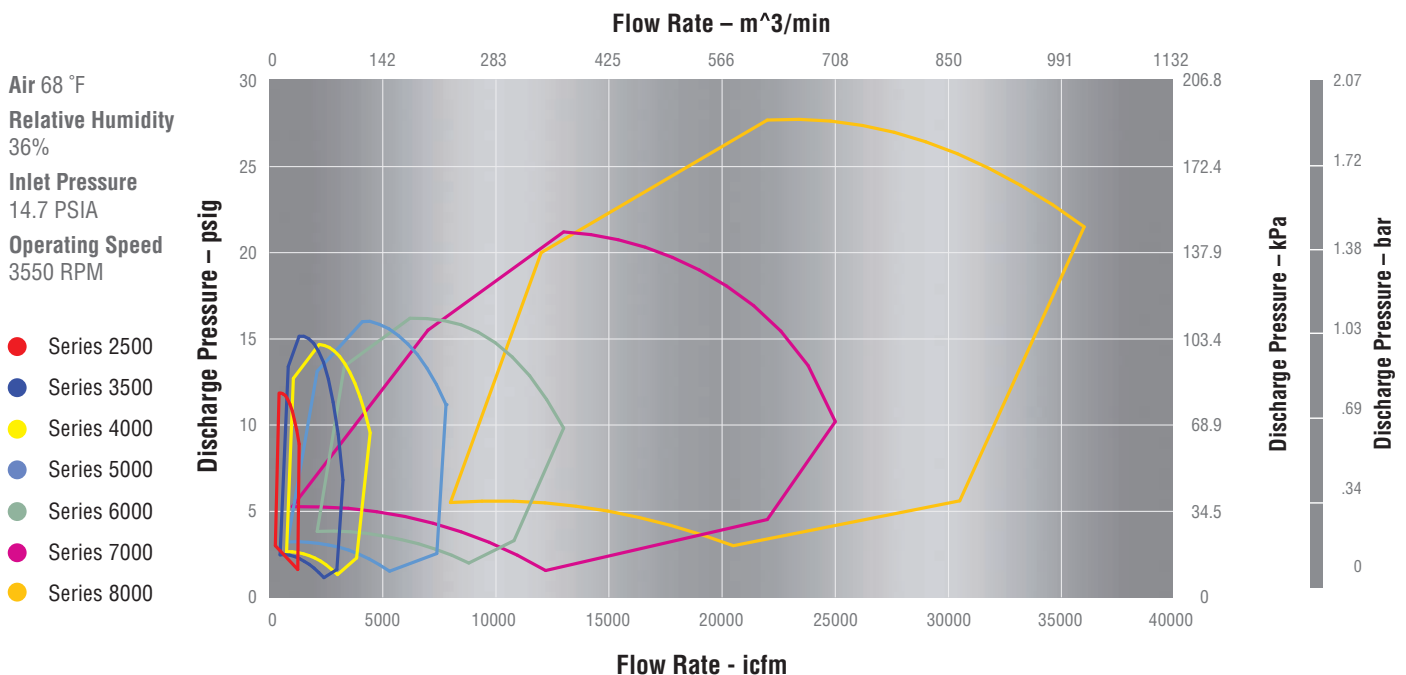
With this superior energy efficiency, Power Mizer blowers ensure that minerals have enough time to become activated by the process regardless of flow rate or cell size. Blowers are available with pressure to 28 psig (193 kPa); volume to 35,000 icfm (991 m<sup>3</sup>/min); and power to 2000 hp (1491 kW).

### Support for additional mining operations

Minerals separated in mining flotation cells are an indispensable resource in industry, agriculture, national defense and science. They are used in a variety of alloys and machinery, and in electrical, chemical, automotive, aircraft, military and civilian products. To help the mining industry provide its basic raw materials all over the world, Spencer can provide blowers for additional applications.

Spencer blowers provide air for ventilation to help safely manage toxic gases and meet local regulations. In addition, we can provide nitrogen blowers and bio oxidation blowers for metal extraction.

### Power Mizer® Blower Performance





Spencer Corporate Headquarters and Manufacturing Plant, Windsor, CT USA

## Mining innovation for the 21st Century

Today, customers in the mining industry must extend their operations to increasingly remote parts of the globe to reach precious resources. That is why Spencer is dedicated to providing its legendary technical support and services everywhere mining and ore beneficiation are taking place. As the industry continues to face complex operational as well as environmental issues, Spencer will continue to lead in the global market, focusing on innovation with lean principles, engaging employees and the entire supply chain, and supporting smart, efficient, cost-effective ore flotation processes.

## Global operations provide total support

Spencer maintains an in-house research and testing laboratory where experts conduct application studies, product development, and testing programs to ensure customers take advantage of the latest technologies available. If needed, blowers can be custom engineered to meet special demands. More than a century of air and gas handling experience has led to leadership in high-efficiency, cost-effective approaches to ore flotation processes.

Additionally Spencer provides maintenance services anywhere in the world. Authorized sales representatives are backed by in-house engineering staff, and as a team they evaluate applications and recommend effective maintenance plans based on near- and long-term needs. They are also available during installation, start-up and operation. This strategically located network ensures Spencer-approved experts are close at hand whenever they are needed.

Email [marketing@spencer-air.com](mailto:marketing@spencer-air.com) or visit [www.spencerturbine.com](http://www.spencerturbine.com) to locate a Spencer representative.



Three Power Mizer Series 7000 blowers are installed in a copper mining operation in Chile.

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*Blowers & Gas Boosters with an Engineering Edge*

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