

# SPARGERS AND SPARGING TECHNOLOGY

## SPARGERS AND SPARGING TECHNOLOGY FOR COLUMN FLOTATION CELL AND LEACHING TANKS

As the world leader in spargers and sparging technology for over 25 years, SGS Minerals has produced over 10,000 spargers to help the mining industry globally. Through our technological expertise we have developed the best and the most economical line of spargers made with state of the art wear resistant material. Our spargers have been designed for ease of operation, maintenance, removal and re-installation.

Spargers are an industry tool designed to deliver gas into a column flotation cell or leach tank to ensure that bubbles are dispersed evenly throughout the flotation cell or leach tank. Typically, a column flotation cell can contain up to 20 spargers in order to help the reaction in the cell while up to 16 spargers can be used for a leach tank.

Each Sparger includes a grommet seal (compression fitting) which allows the sparger to be inserted and removed from the tank while the tank is filled with slurry and in operation.



Figure 1: Sparger Selection

A feature for all of SGS Minerals sparging technology is that none of our spargers require a fixed water line, resulting in an increased life span.

SGS provides installation and maintenance on all spargers to ensure they are properly installed and working correctly to ensure that the spargers are operating efficiently.

### VARIABLE GAP SPARGER

The Variable Gap Sparger, developed by SGS Minerals, generates a swarm of mineralized bubbles which is directed from the edge of a column wall towards the middle of the column. The Variable Gap Sparger is ideal for start up column installations. The width of the gap that controls the exit velocity of gas can be adjusted with a manual valve.

With a variable orifice size, the Variable Gap Sparger is available in three chamber lengths comprising of 10.5", 20.5" and 42.5". Each Variable Gap Sparger weighs approximately 2 kg.

Technical features of the Variable Gap Sparger include:

Variable Gap Sparger Specifications	
Maximum pressure	1,000 kPa
Sustainable operating pressure range	500 to 700 kPa
Maximum air flow rate	200 m <sup>3</sup> /h
Sparger material	Stainless steel



Figure 2: Variable Gap Sparger

Benefits of the Variable Gap Sparger include:

- Automated bubble size adjustment capability
- Control valve controlling air rate providing consistent and evenly distributed flow through
- Consistent metallurgy

### FIXED GAP SPARGER

The Fixed Gap Sparger, developed by SGS Minerals, generates a spray jet of gas directed from the edge of a flotation column wall towards the middle.

The pressure at the Fixed Gap Sparger determines the exit velocity of gas. The Fixed Gap Sparger is equipped with an automatic shutoff that prevents slurry from entering the sparger on compressor failure or on a normal operation shutdown.

The Fixed Gap Sparger is available in three orifice sizes including 4mm, 5mm and 6mm. Each orifice size is available at 20.5" and 42.5" chamber lengths.

Technical features of the Fixed Gap Sparger include:

Fixed Gap Sparger Specifications	
Maximum pressure	1,000 kPa
Sustainable operating pressure range	500 to 700 kPa
Maximum air flow rate	4mm - 25 m <sup>3</sup> /h 5mm - 35 m <sup>3</sup> /h 6mm - 50 m <sup>3</sup> /h
Interior shut-off device	Automatic
Sparger material	Stainless steel



Figure 3: Fixed Gap Sparger

**HIGH PRESSURE SPARGER**

The SGS High Pressure Sparger has been specifically designed for use in the oil industry. The High Pressure Sparger is a Modified Fixed Gap Sparger with a special support system to stabilize the operation at high pressure. Contact us for more product details and customization.

Technical features of a typical High Pressure Sparger include:

High Pressure Sparger Specifications	
Maximum pressure	2,000 kPa
Sustainable operating pressure range	500 to 120 kPa
Maximum air flow rate	200 m <sup>3</sup> /h
Interior shut-off device	Automatic and variable
Sparger material	Stainless steel



Figure 4: High Pressure Sparger

**SINTERED SPARGER**

The Sintered Sparger is manufactured upon customer’s request. The Sintered Spargers are typically used in water treatment process. Contact us for more product details and customization.



Figure 5: Sintered Sparger

**CUSTOMIZED SPARGER CONFIGURATION**

Specifically designed for higher pressure rates and special operations, SGS Minerals has the design capabilities to design customized spargers for unique situations and operations.



Figure 6: Customized Sparger

**CONTACT US**

For more information about our spargers and the options available to you, please contact us at [minerals@sgs.com](mailto:minerals@sgs.com)