

# BIONOMIC RotaBed™ Fluidized Bed Scrubber System for Ultra High Efficiency Gas Absorption and Particulate Removal

## Overview

The Bionomic RotaBed® Gas Scrubber represents a major technological breakthrough designed to provide ultra high efficiency gas absorption or particulate removal.

The key to the RotaBed's superior performance is a unique, swirl-induced Coriolis effect created in the scrubber's turbulent, high mass transfer bed. This effect provides superior stability and turndown capability over less advanced designs.

Combined with a "packless", highly plug-resistant grid cross section that is 99% open in the fluidized contact/scrubbing zone, RotaBed delivers exceptionally high gas throughput capacity (4-6 times greater than packed towers or tray scrubbers) that results in maximum scrubbing efficiency at lower costs.

RotaBed Scrubbers are available in all materials of construction with standard models from 130-122,900 acfm and larger sizes on a custom basis. A cost-effective skid-mounted ScrubPac™ version comes prepackaged with all auxiliary piping, pumps, instrumentation, and other necessary components for slide-it-in, hook-it-up operation.

Pilot rental units are also available for on-site testing and are backed by complete process and engineering support.

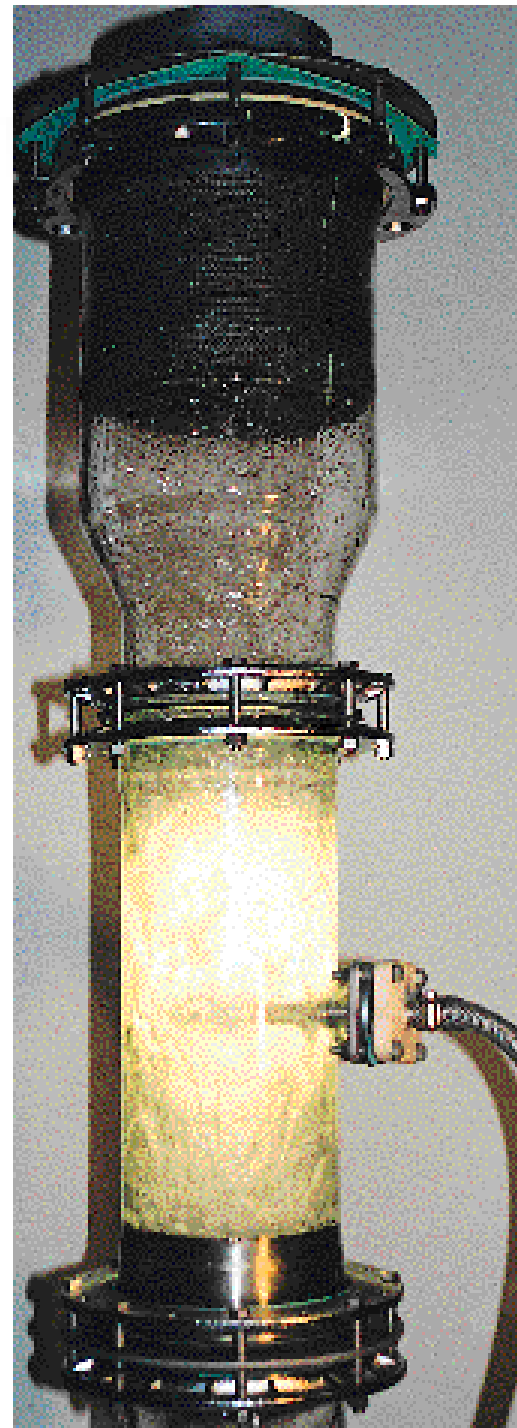


\*Patent Pending

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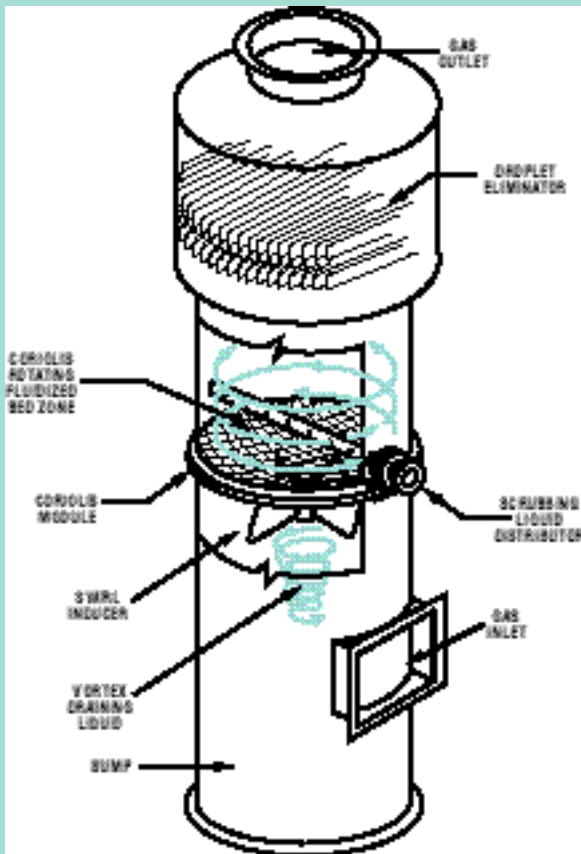
## Features/Benefits

- Smaller diameter scrubber vessel and trouble-free design **reduce space requirements, installation, and operating costs**
- Advanced packless scrubbing technology provides up to **600% greater absorption efficiency per unit volume than packed scrubbers as well as superior particulate removal**
- "Free" energy from Coriolis scrubbing effect **provides removal efficiencies >99% at lowest possible operating cost**
- Low solubility contaminant gases are easily **handled with multiple Coriolis fluid bed stages**
- Availability of modules to retrofit existing spray, packed tower or tray scrubbers **provides a cost-effective alternative to complete replacement of existing equipment**



## Typical Applications

- Gaseous and particulate contaminant removal from processing operations in the chemical, pharmaceutical, pulp & paper, semiconductor, fertilizer, petroleum, and food industries
- Acid gas removal from high temperature thermal oxidizers
- Chlorine dioxide removal in pulp and paper bleach plants
- Acid and alkali fume removal from pickling, galvanizing, and cleaning lines including HCL regeneration plants in the metals industry
- Odor control and VOC removal from process and waste treatment operations
- Flue gas desulfurization at power generation facilities
- and many others



## Operating Principle

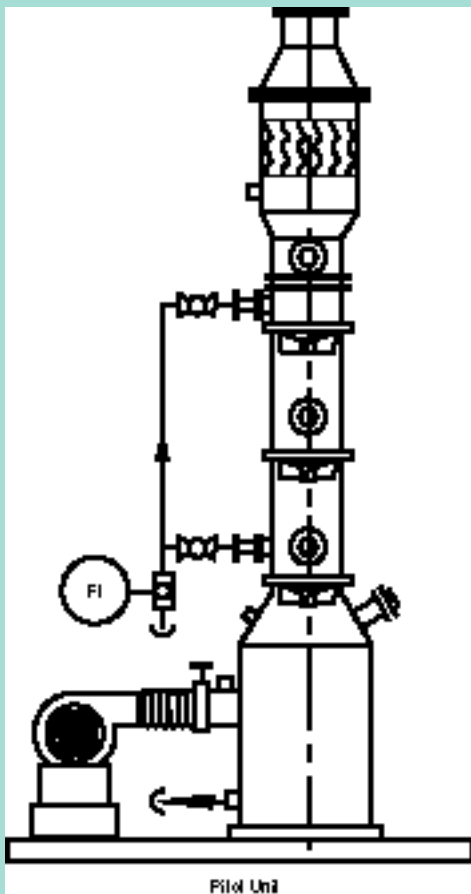
During operation, contaminated gas and particulate matter enter the scrubber's gas inlet and flow upward while scrubbing liquid is introduced via the liquid scrubbing distributor.

A stationary Coriolis swirl inducer, with gas turning vanes and liquid drain sleeve, imparts an angular component to the upflowing gas and a vortex swirl to the draining liquid to rotate the bed. The scrubber's open, "pack-less" plug-resistant grid creates and defines the fluidized scrubbing zone.

Fully open, straight pipe liquid inlets devoid of spray nozzles that can plug or blind are used to introduce the scrubbing liquid above the grid at low energy (less than 5 psig).

The rotating Coriolis induced fluidized bed zone produces violent mass transfer. The resulting high gas throughput with low pressure drop and greatly enhanced scrubbing action produces the most efficient mass transfer and particulate capture possible.

Clean air exits the scrubber gas outlet and absorbed toxic contaminants and/or trapped particulate matter self drain into the scrubber's sump.



### The RotaBed™ Pilot Rental Program- A Unique Shared Risk/Rental Option

Not sure about whether RotaBed Scrubbers are right for your particular application? Bionomic Industries is willing to share your risk through a unique rental/purchase option that allows you to rent a skid-mounted pilot unit on a weekly basis with up to 25% of rental cost applied to later purchase of a RotaBed Scrubber.

Fully operational (requiring only utility and process connections) when they arrive at your site, RotaBed Pilot Units are available in stainless steel or polypropylene for capacities from 600 to 800 cfm.

Consult your local representative or contact Bionomic Industries for further details.



*Engineered Air Pollution Control  
Systems with Unequaled  
Performance*

Bionomic Industries, Inc.  
777 Corporate Drive  
Mahwah, NJ 07430  
201/529-1094  
FAX: 201/529-0252

E-mail: [bionomic@bellatlantic.net](mailto:bionomic@bellatlantic.net)  
Web site: [www.bionomicind.com](http://www.bionomicind.com)