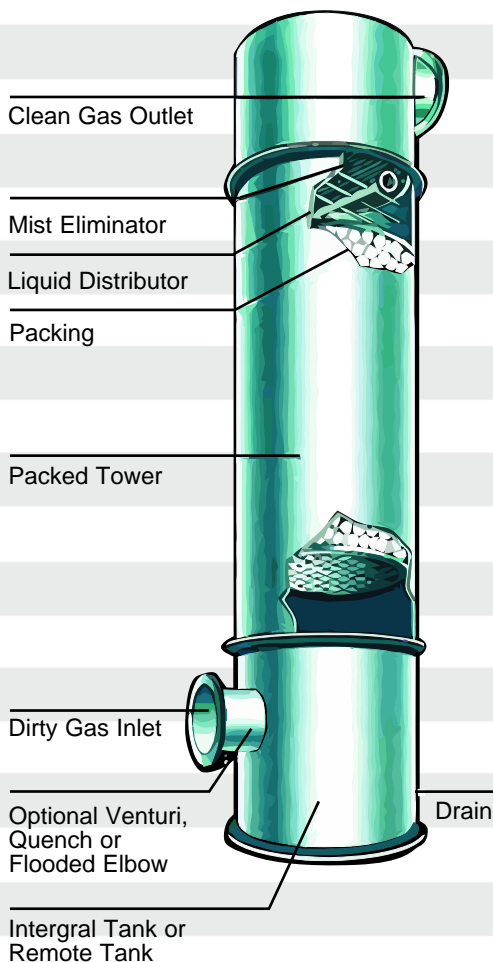


## PACKED BED SCRUBBERS



The Packed Bed Scrubber, or Packed Tower, is designed to remove gaseous or vaporous pollutants from an air stream. The process is accomplished by contacting the contaminated air stream with a scrubbing liquor that absorbs or chemically reacts with the pollutants. Some vapors can be simply removed by condensation through the cooling effect of the circulating liquid. The cleaned air is then discharged to the atmosphere and the contaminated scrubbing liquor is either disposed of in an approved manner or chemically treated and recycled. In some cases, the collected contaminants can be recovered and reused in the original or other processes.

### How Packed Towers Work

In order to optimize the contaminant removal efficiency, the contact between the contaminated air and the scrubbing liquor must be maximized. To achieve this, specially designed packing materials are used to fill the tower to a specified depth. The combination of packing material, packing design, depth of packing, bed velocity, and the scrubbing liquor chemistry and amount all combine to achieve the desired results. This is the science behind effective Packed Bed Scrubber design.

### Size Availability

Since every system must be looked at individually, each unit is custom tailored to meet the specific needs of the application. Therefore, system size is virtually unlimited. Systems as small as 1 cfm for pilot or laboratory use to over 100,000 cfm giants for full-scale plant operation can be provided.

# PACKED BED SCRUBBERS



## Available Options:

- Recirculation pump systems
- pH control systems
- Inlet venturi for particulate control
- Inlet quench for elevated inlet temperature control
- Instrumentation packages
- Skid mounting
- Complete integrated systems
- High pressure or vacuum design
- Fans and ductwork
- Replacement parts
- Installation

At Fisher-Klosterman, our engineering staff is capable of providing you with equipment integrating all aspects of your process needs and air pollution control requirements. The result is a complete operational system that may include:

- Packed tower with packing
- System fan
- Ductwork
- Liquor recycle system
- Chemical reagent system
- Instrumentation for system control and monitoring
- Stack
- Complete turnkey systems
- Packaged systems

### Materials of Construction

- Fiberglass reinforced plastic (FRP)
- Carbon steel
- PVC or CPVC
- Various stainless steels such as 304 or 316
- High alloys such as Hastalloy C-276, Inconel and others
- Duplex stainless steel

### Typical Applications

- Chemical production
- Fertilizer production and processing
- Pulp and paper
- Petrochemical
- Pharmaceutical
- Food and beverage
- Electronics (chip manufacturing)
- Odor control
- Incinerator systems
- Steel making
- Acid gas removal (HCl, H<sub>2</sub>S, HF and many others)
- VOC abatement
- NOx removal



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