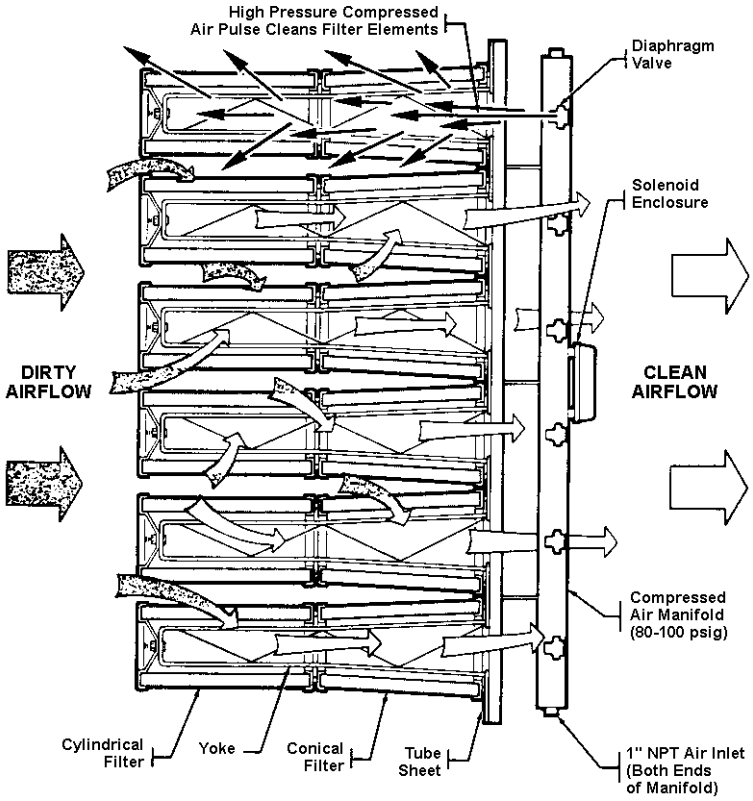
Ambient Air Tubesheets

Product Overview

The Ambient Air Tubesheet (AAT) product line was originally designed in 1985 to be used in air house systems providing filtered make-up and replacement air in dirty, industrial environments. This product is a basic tubesheet fitted with Ultra-Web II® filters and pulse cleaning hardware. The filter at the tubesheet is conical in shape, while the other cartridge is cylindrical. The AAT provides continuous-cleaning filters as an alternative to roll media or ASHRAE panel filters. Standard AAT designs are available for airflows between 4,000 and 118,000 cfm (6,796 and 200,482 m^3/h) and are complete with mounting flange, filters and filter supports (yokes), pulse hardware, and electrical controls. Housings, housing design, and mounting are typically supplied by the customer and are not part of any standard package.



Operation Explanation

Normal Operation: During normal operation, air enters the filtering section through the intake duct and passes through the filter elements. Dust is collected on the outside surfaces of the elements. Clean air flows through the center of the elements into the clean air duct supplied by the customer.

Filter Cleaning: During the filter element purge, the solid-state control timer automatically selects the pair of elements to be cleaned and activates a solenoid valve, which opens an air diaphragm valve. High pressure air pulses directly into the center of the selected elements for 150 milliseconds, blowing the collected dust off the filter elements. The dust is swept downward by gravity and deposits on the floor beneath the filters or into a customer supplied hopper.

Application Summary

Torit® Ambient Air Tubesheets are a competitively priced alternative to replaceable barrier filters in industrial environments where the air being filtered has a dust loading which may be too high for standard panel-type air filters. Such environments would include, but are not limited to, steel

mills, above ground mining, and open stock piles where filtered air to buildings or motor/electrical rooms is necessary.

Other applications have included housing the AATs behind louvers in large booth areas. This Airmod Module design (previously called the VLB or Very Large Booth) has proven successful for ventilating sanding and grinding of aerospace parts where cross drafts of 175 fpm (0.9 m/s) and higher are desired.

Sizing and Selecting Criteria

Sizing an Ambient Air Tubesheet is based on the ability of the filters to handle a dust loading that is very light when compared to source capture dust collection systems.

For "ambient" conditions, the general airflow range of each AAT is designated in the model number. For example, a Model T46 is rated for a range of 4,000 to 6,000 cfm (6,796 to 10,194 m^3/h), a Model T2939 is rated for 29,000 to 39,000 cfm (49,271 to 66,261 m^3/h), etc. Once the airflow requirement is known, sizing is a simple matter of selecting the AAT that will handle the desired airflow. For the maximum recommended air-to-media ratio, use the "Ruler of Dust Collection" slide rule available through your regional sales office or Applications Engineering

If used for any application other than filtering ambient outside air, an AAT must be sized and selected based on the parameters of the application. For example, an Airmod Module using a tubesheet would be sized to operate at air-to-media ratios equivalent to those in an Environmental Control Booth (ECB). Another example to consider, a tubesheet used in a housing for source-capture of nuisance dust would be sized to operate at baghouse air-to-media ratios. Any application of an AAT for other than ambient air filtration should be discussed with Applications Engineering.

Features/Advantages/Benefits

Features	Advantages	Benefits
10-Gauge reinforced tubesheet	• Heavy-duty, rigid construction	• Ease of installation
Continuous pulse cleaning	• Filter pressure drop is maintained	• Constant airflow through system • Less frequent filter changes
Ultra-Web II® filter media	• High filtration efficiency • Better dust release during pulsing	• Cleaner filtered air • Longer filter life
Conical element at tubesheet	• Lower initial pressure drop	• Lower operating costs