



# Series 9000

## Preformed Spray Scrubber

### Overview

A major advancement in cyclonic scrubber technology, the Series 9000 Preformed Spray Scrubber is capable of outperforming venturi scrubbers on an energy cost basis for collection of particulate in the 2 micron and larger size range and simultaneous removal of gaseous pollutants.

The Series 9000 incorporates a unique specially designed gas entrance involute section fitted with proprietary reverse jet sprays for concentrated and rapid treatment of dust particles and fumes. Access to and ability to service the spray components from the exterior of the scrubber eliminates the inherent maintenance problems and resultant downtime as with conventional spray scrubber devices while achieving a major increase in collection efficiency.

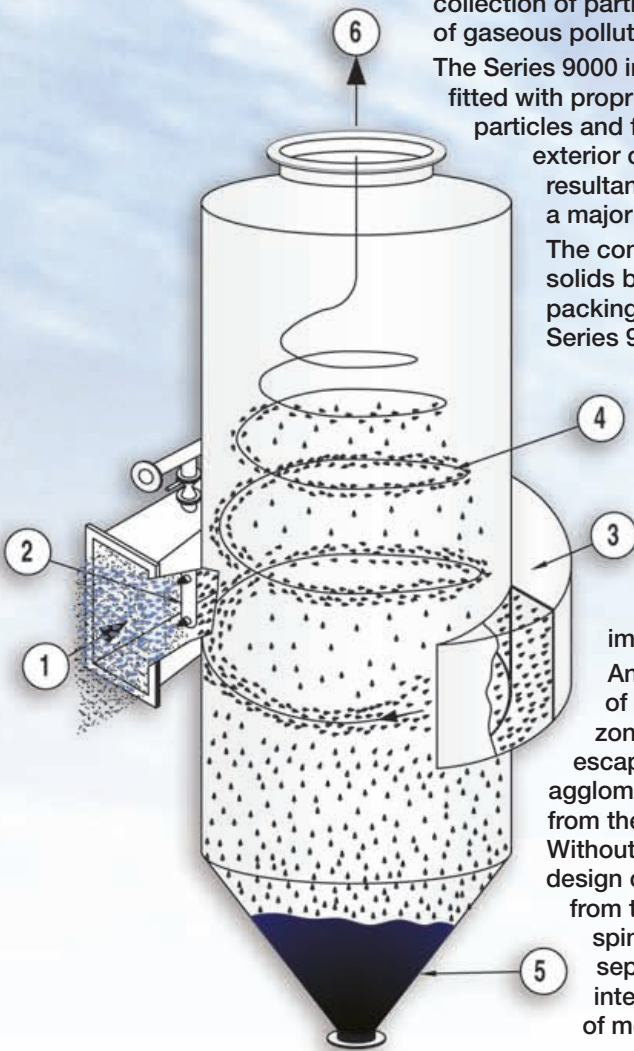
The completely unobstructed open design of the scrubber vessel eliminates solids buildup and required cleaning, maintenance or replacement of internal packing elements, turning vanes or mist eliminator components. Furthermore the Series 9000 is extremely compact enabling installation in limited height locations.

Versatility of the Series 9000 Preformed Spray Scrubber can be extended to handle varying gas flow volumes with incorporation of an optional variable area inlet vane assembly.

### How it Works

Contaminated gas enters the long narrow involute (1) and is horizontally accelerated through a concentrated zone of sheared reverse jet spray (2). In this zone, the hydraulically atomized extremely fine droplets of scrubbing liquid at high relative velocity collide with the oncoming gas and impinge with the particulate.

Any water soluble gaseous pollutants present are absorbed by the millions of created spray droplets. This combination of the unique involute and spray zone design generates a fierce scrubbing action that eliminates bypass and escape of untreated contaminants. The particulate contained liquid droplets agglomerate in the final section of the involute (3) and undergo an initial separation from the gas stream before entering the cyclonic entrainment removal section. Without the need for internal baffles, plates or vanes the high efficiency involute design creates a positive centrifugal action to remove the majority of droplets from the gas. The gas then enters into the cyclonic separator section (4) where spinning forces the remaining entrained liquid droplets with pollutants to separate from the gas through impaction and collection on the scrubber interior wall, gravity draining into the sump section (5). The cleaned gas free of moisture droplets exits the top of the unit (6).





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## Available Materials of Construction

- Mild Steel, 304, 316 and AL6XN Stainless Steels, High Nickel Alloys, FRP, Polypropylene

## Capacity Size Range (Gas Handling Capacity)

- 1,500 through 70,000 cfm

## Pressure Drop Range

- 5" through 9" w.c.

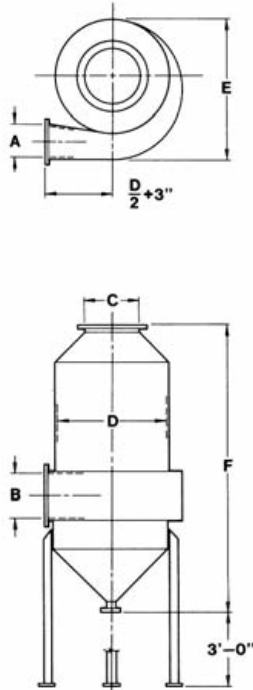
## Contaminant Removal Efficiencies

- Particulate removal: 2 microns and above from 97 to over 99.9%
- Water soluble gases up to 98%

## Typical Applications Include

- Particulate, mists, odors, and gaseous emissions from chemical, pharmaceutical, food, and mineral product dryers
- Mineral, ore, and rock product crushing and grinding operations
- Fertilizer dryer particulate and acid gases
- Dust emissions from bag dumping, material handling, and mixing operations

## Size Chart



CFM	A	B	C	D	E	F
2,000	8"	1'-0"	10"	3'-0"	3'-6"	7'-10"
3,000	10"	1'-3"	1'-2"	3'-6"	4'-1"	9'-2"
4,000	11"	1'-6"	1'-2"	3'-9"	4'-4"	9'-8"
5,000	1'-1"	1'-7"	1'-4"	4'-0"	4'-10"	10'-2"
6,000	1'-2"	1'-8"	1'-6"	4'-6"	5'-4"	11'-2"
8,000	1'-4"	2'-0"	1'-8"	5'-0"	6'-0"	12'-5"
10,000	1'-6"	2'-3"	2'-0"	5'-6"	6'-7"	13'-6"
12,000	1'-8"	2'-5"	2'-6"	6'-0"	7'-3"	14'-5"
16,000	1'-11"	2'-10"	2'-6"	6'-6"	7'-11"	15'-10"
20,000	2'-1"	3'-2"	3'-0"	7'-0"	8'-7"	16'-11"
25,000	2'-4"	3'-7"	3'-0"	7'-6"	9'-3"	18'-3"
30,000	2'-7"	3'-10"	3'-6"	8'-0"	9'-11"	19'-4"
35,000	2'-9"	4'-3"	4'-0"	8'-6"	10'-6"	20'-6"
40,000	3'-0"	4'-6"	4'-0"	9'-0"	11'-3"	21'-9"
45,000	3'-2"	4'-8"	4'-0"	9'-6"	11'-11"	22'-11"
50,000	3'-4"	5'-0"	4'-6"	10'-0"	13'-6"	24'-2"
55,000	3'-6"	5'-3"	4'-6"	10'-6"	14'-1"	25'-4"
60,000	3'-8"	5'-5"	5'-0"	11'-0"	14'-9"	25'-4"
65,000	3'-9"	5'-8"	5'-0"	11'-6"	15'-4"	27'-7"
70,000	3'-11"	5'-11"	5'-0"	12'-0"	15'-11"	28'-9"

**Note:**

1. Consult factory for dimensions on sizes not listed.
2. Drawing not to be used for construction purposes.