

**Features:**

Tesca Venturi Air Scrubber Trainer consists of mainly a transparent cylindrical venturi, a separation chamber, a water re-circulation system, a dust feeding system, and a variable speed air blower. Instruments for the measurement of the incoming air flow and pressure drops across the convergence and divergence sections of the venturi are provided. The unit has been designed for student demonstration on dust pollution control using a venturi scrubber.

The venturi section is made of clear PVC with throat diameter of 32 mm and both convergence and divergence diameter of 101.6 mm. The separation chamber is also made of clear PVC measuring approximately 0.6 m diameter and 2 m tall. The chamber has a rectangular tangential inlet at the bottom that is connected to divergence section of the venturi. A mist eliminator at the top section of the chamber prevents any water droplets from escaping. The water re-circulation system consists of a water tank, a water pump, a liquid flow meter, a pressure gauge and a pressure regulator. An air blower installed at the outlet is capable of drawing 280 m<sup>3</sup>/hr of air through the system. The air inlet velocity can be varied by means of adjusting the air blower speed. A dust feeding system is provided for introducing a desired amount of dust particles into the air stream before entering the separation chamber. A differential pressure instrument is provided for the purpose of measuring pressure drop, P, across the venturi.

Note: Specifications are subject to change.

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**Technical Specifications****Venturi:**

- Made of clear acrylic
- Inlet & Outlet ID: Approx. 100 mm
- Throat dia. (id): 32 mm
- Convergent Angle 10.5 Deg
- Divergence Angle 5 Deg.

**Separation chamber**

- Material Rigid Acrylic Glass
- Cylindrical chamber. Size: 0.4 m (dia.) X 1.4 m (h).
- Tangentially Connected to a circular inlet
- Mist eliminator at top made in Stainless steel
- Removable effluent collector tank made in plastic

**Water re-circulation system:**

- 55 L rectangular tank made of stainless
- Level Switch
- Centrifugal pump
- Pump Flow Rate: 25 L/m (Max.)
- Flow Meter: 0-10 LPM

**Air blower:**

- Air Delivery: 280 m<sup>3</sup>/hr @ 3400 RPM
- Max. Static Pressure: 20 kPa
- Blower Speed Control: Frequency Inverter
- Air velocity meter: Venturimeter with differential pressure gauge, Differential Pressure Range 0-20 kPa
- Feeding System: Acrylic Tank with inlet nozzle
- Control Console
- Material: Coated Steel box
- Waterproof panel Sticker
- Housing for electrical & electronic component
- Mobile steel structure

**Experimental Capabilities**

- Demonstration of Venturi scrubber in dust pollution control.
- To study the effect of liquid-to-gas (L/G) ratio upon separation efficiency.
- To verify the theoretical relationship between total pressure drop, P and inlet velocity, v<sub>i</sub>.

**Required Services**

- Electric Supply 415 V AC, Three Phase, 50 Hz.
- Floor Space: 4 m x 2 m