

# Gas Absorption Column



*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*

**TESCA TECHNOLOGIES PVT. LTD.**

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## Features

- ◆ Designed to demonstrate principle of Gas absorption by liquids.
- ◆ Safe to operate & non-hazardous gases used in trainer.
- ◆ Comprehensive Instrumentation Panel with all necessary measuring instruments & Safety Devices.

designed to demonstrate & analyze principle of gas absorption by means of liquids (solvent absorption). The unit comes complete with a packed column, a bottom cooler, a feed vessel and a circulation pump. The unit allows students to run experiments on gas absorption, e.g. the absorption of carbon dioxide into water. Sampling points are

provided for analysis purposes. Other gas absorption processes that are used in the chemical industry such as the absorption of sulphur dioxide, hydrogen sulphide, ammonia, hydrogen chloride, nitric oxides, etc. can be studied but care must be exercised to ensure proper safety and disposal procedures.

Detailed Operation & Maintenance Manual is provided along with the trainer.

## Technical Specifications

The unit comprises the following main items:

- Absorption Column
- Floor mounted packed column gas absorption unit using a 75mm diameter, 1.4m long clear acrylic column. The column contains 7 litres of 10 x 10mm glass Raschig rings and is mounted in a steel frame.
- Pressure sensing and gas sampling points are sited at the top, centre and base of the column.
- Two manometers are included to measure pressure.
- A Hempl type gas analysis apparatus is included.
- Three variable area flow meters are included to measure the flow of gas, air and liquid.
- A rotary compressor is used to pump air into the column.
- Water (solvent) is circulated using a centrifugal pump, using a 50 litre capacity feed tank.
- A comprehensive instruction manual is supplied which details the necessary installation, commissioning and maintenance procedures.



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Hempl Gas Analyser

### **Experimental Capabilities**

- ◆ Study of the basic principles of the absorption of a gas into a liquid using a packed column
- ◆ Demonstration of methods of gas and liquid quantitative analysis
- ◆ Production of mass balances for a packed absorption column
- ◆ Method of transferring units, including calculation of NTU and HTU
- ◆ Determination of the Mass Transfer Coefficient
- ◆ Study of the hydrodynamic characteristics of a packed column
- ◆ Determination of loading and flooding points

### **Required Services**

- ◆ Electric Supply 230 V AC, Single Phase, Earthed.
- ◆ Water supply: 10L/min @ 1bar
- ◆ CO<sub>2</sub> Cylinder with pressure regulator
- ◆ Vent piping to outside laboratory
- ◆ Titration glassware for liquid analysis Separate drain tank for treatment of effluent

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