



The **Domestic Vapor Absorption System Trainer** is a comprehensive educational system designed to demonstrate the **working principle and operation** of an **ammonia-based absorption refrigeration system**. Ideal for **vocational training institutes, engineering colleges, and technical training centers**, the unit is suited for both theoretical and hands-on learning.

### System Features

- Realistic **model of an absorption refrigeration system** based on domestic applications
- Simulates refrigeration using an **ammonia-water solution** and **hydrogen as auxiliary gas**
- **Dual heating option** for the boiler: electric or gas-fired
- **Adjustable evaporator heater** to simulate varying cooling loads
- **Integrated bubble pump** and all major refrigeration cycle components visible and accessible for learning

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



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- Digital instrumentation for real-time **temperature and power monitoring**

### Technical Specifications

Component	Specification
<b>Working Medium</b>	Ammonia-water solution
<b>Auxiliary Gas</b>	Hydrogen
<b>Electric Heater (Boiler)</b>	125 W
<b>Gas Burner (Boiler)</b>	Adjustable propane gas burner
<b>Evaporator Heater (Load Simulation)</b>	Adjustable, 50 W
<b>Measuring Ranges</b>	Temperature: 4 channels, -50 to 200°C
<b>Power Supply</b>	Power: 0 to 150 W
<b>Ignition System</b>	230V, 50Hz, Single-phase
	Piezoelectric igniter for safe gas burner ignition

### Main System Components

- **Evaporator**
- **Absorber**
- **Boiler with Bubble Pump**
- **Condenser**
- **Refrigerant Circuit and Expansion Elements**
- **Digital Display for Temperature and Power Readings**

### Learning Objectives & Experimentation

This trainer enables the following educational outcomes:

- Understand and demonstrate the **principle of vapor absorption refrigeration**
- Identify and explain the **function of each system component**

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- Observe and analyze the **operational behavior under load**
- Conduct experiments involving:
  - Cooling load variation via evaporator heater
  - Heating method switching (gas/electric)
  - Refrigerant flow monitoring and bubble pump functionality
  - Temperature and power analysis during different system conditions

### Scope of Delivery

- 1 × Experimental Trainer Unit
- 1 × Gas Supply Hose
- 1 × Pressure Reducer
- 1 × Set of Instructional Materials and Experiment Guide

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