Thermodynamics Laboratory Equipment

Is designed to help students and researchers explore and understand the principles of thermodynamics, which deals with heat, energy, and work interactions in physical systems. These pieces of equipment are crucial for conducting experiments that illustrate fundamental thermodynamic concepts like heat transfer, work-energy relationships, efficiency, and the laws of thermodynamics. They allow for practical applications of theoretical principles and help in visualizing and quantifying energy transformations.

Excellence in Every Lab

TD 0101 Single Stage Air Compressor Test Rig

Description: The test rig comprises of a Single stage air compressor fitted with an air tank with orifice, pressure gauges, and an energy meter to measure the input & a Temperature indicator measures the temperatures at various points. The compressor is mounted on air receiver along with the motor, and is provided with air relief valve (safety) and a pressure switch. The unit determines volumetric efficiency and isothermal efficiency at various discharge pressures.

Ordering:

- TD 0101: Single Stage Air Compressor Test Rig

TD 0102 Two Stage Air Compressor Test Rig

Description: The test rig comprises of a two-stage air compressor fitted with an air tank with orifice, pressure gauges 9 an energy meter to measure the input & a Temperature indicator measures the temperatures at various points. The compressor is mounted on air receiver along with the motor, and is provided with air relief valve (safety) and a pressure switch. The unit determines volumetric efficiency and isothermal efficiency at various discharge pressures

Ordering:

- TD 0102: Two Stage Air Compressor Test Rig

TD 0103 Rotary Air Compressor Test Rig

Description: The Apparatus consists of a rotary vane compressor driven by an electric motor; Air intake is measured by an orifice meter and manometer, Discharge “pressure is measured by a pressure gauge. Power input of the compressor measured by an Energy meter. Thus, the students can determine volumetric efficiency, power consumption and free air discharge of compressor.

Ordering:

- TD 0103: Rotary Air Compressor Test Rig

TD 0104 Centrifugal Blower Test Rig

Description: The apparatus consists of a spiral casing, which houses an impeller. Impeller is driven by a variable speed D.C. motor. Three, interchangeable impellers, viz. Radial forward and backward curved vanes are provided with the unit. Digital indicators are provided for speed of impeller. A venture provided measures the discharge. Thus, students can evaluate the performance of different impellers at various speeds.

Ordering:

- TD 0104: Centrifugal Blower Test Rig

TD 0105 Water Cooling Tower Apparatus

Description: The apparatus consists of a forced draught, counter flow type-cooling tower. A blower supplies cooling air. Air enters the tower at the bottom. Hot water is, obtained from a geyser. Hot water is sprayed over the mesh packing through the nozzles and it flows downwards. Evaporative cooling of water occurs due to the current of air and water gets cooled. This student can study the operation of cooling tower and calculate the energy balance.

Ordering:

- TD 0105: Water Cooling Tower Apparatus

TD 0106 Separating Throttling Calorimeter

Description: To find out dryness fraction of steam by combined separating and throttling calorimeter. The steam passing out from separating calorimeter may still contain some water vapor, in it. in other words, it may not be absolutely dry. Again, in a throttling calorimeter steam after passing through the throttle valve must be superheated or at least dry saturated. this limits the extent of dryness fraction that can be reliably measured, depend up on the pressure of steam in the main steam pipe. if a sample of steam, which may be still wet after passing through the throttle valve i.e it will not be superheated. thus, under this condition the throttling calorimeter fails to enable us in determining the value of dryness fraction of steam. to overcome these difficulties, we make use of separating and throttling calorimeter.

Ordering:

- TD 0106: Separating Throttling Calorimeter

TD 0107 Steam Power Plant Trainer

Description: Compact Steam Power Plant Trainer are popular in industries because they occupy less space and offer reasonable temperature drop. The apparatus consists of fabricated SS shell, inside which copper tubes with baffles on outer side are fitted. This is two-pass heat exchanger so that hot water passes to one end of shell through the tubes and returns to another end through remaining tubes. The cold water is admitted at the one end of shell, which passes over the hot-water tubes. Valves are provided to control the flow rates of hot and cold water. Flow rates of hot and cold water are measured using Rotameters. A magnetic drive pump is used to circulate the hot water from a re-cycled type water tank, which is fitted with heaters and Digital Temperature Controller.

Ordering:

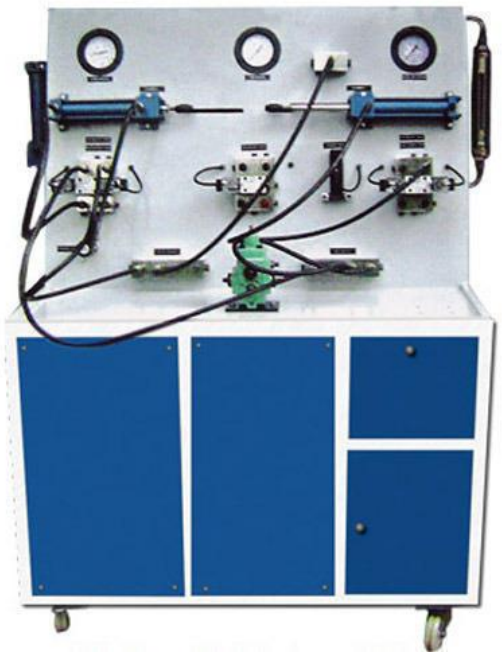
- TD 0107: Steam Power Plant Trainer

TD 0108 Hydraulic Trainer Classic

Description: A Hydraulic Trainer Classic typically refers to an educational tool or system designed to demonstrate the principles of hydraulics in a clear, interactive, and practical way. These systems are used for training students or professionals in the fundamental concepts of fluid mechanics and hydraulic power. The "Classic" in its name suggests that it may be a more traditional or standard model of such trainers, perhaps focusing on basic yet essential principles rather than advanced or specialized features.

Ordering:

- TD 0108: Hydraulic Trainer Classic



TD 0109 Hydraulic Trainer Electrohydraulic

Description: Hydraulic Trainer Electrohydraulic is meant for demonstrating the design, construction and application of electro hydraulic components and circuits. The components that are available can be mounted on an appropriate profile plate along with grooves for secure and positioning. These are clamped firmly, quickly and safely through quick fixes adaptors. This is fabricated so that students get hands on practical training.

Ordering:

- TD 0109: Hydraulic Trainer Electrohydraulic

TD 0110 Pneumatic Trainer Basic

Description: A Pneumatic Trainer Basic is an educational device designed to teach the fundamental principles of pneumatics (the use of pressurized air to perform mechanical work). It is typically used in engineering and technical training programs to introduce students or trainees to the concepts, components, and operations of pneumatic systems.

Ordering:

- TD 0110: Pneumatic Trainer Basic

TD 0111 Electropneumatic Training

Description: Electropneumatic Training refers to educational programs that focus on the integration and operation of both electrical and pneumatic systems, which are widely used in automation and control industries. The training typically combines theoretical knowledge with practical hands-on experience, covering a range of topics related to electropneumatic systems.

Ordering:

- TD 0111: Electropneumatic Training

TD 0112 Digital Bomb Calorimeter

Description: Bomb Calorimeter outfit provides a simple and inexpensive method for determination of heat of combustion of organic matter and the calorific value and Sulphur content of solid and liquid fuel. The outfit supplied is complete for analysis as per the method recommended by British Standard Institution BS 1016. All parts of the outfit have been finished of petroleum and British Standard Institute.

Ordering:

- TD 0112: Digital Bomb Calorimeter

TD 0113 Open Wind Tunnel Apparatus

Description: A wind tunnel is the classic experiment system for aerodynamic flow experiments. The model being studied remains at rest while the flow medium is set in motion, and thus the desired flow around the model is generated.

Open wind tunnel used to demonstrate and measure the aerodynamic properties of various models. For this purpose, air is drawn in from the environment and accelerated. The air flows around a model, such as an aero foil, in a measuring section. The air is then decelerated in a diffuser and pumped back into the open by a fan.

Ordering:

- TD 0113: Open Wind Tunnel Apparatus

TD 0114 Thin Cylinder Apparatus

Description: A heavy bench top unit for studying the stress and strain in a thin-walled cylinder under internal pressure. A thin-walled cylinder is mounted between two support blocks. Internal pistons and seals create oil sealing. A handwheel at one end of the apparatus enables the cylinder end conditions to be adjusted to either open or closed. The internal pressure is adjusted by means of a hydraulic hand pump on the apparatus. An analogue pressure gauge displays the internal pressure whilst a pressure transducer gives feedback to the Data Acquisition Interface and Software supplied. Strain gauges are arranged on the external surface of the cylinder to measure the radial and circumferential surface strain. The strain gauges are at various angles.

Ordering:

- TD 0114: Thin Cylinder Apparatus

OUR CONTACT

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