



Electronics | Mechanical | Robotics

# Product Catalogue

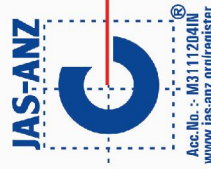
**NEBULA EQUIPMENTS** is focused on providing innovative educational trainers and laboratory equipment of the highest quality, to educational institutions and training centers across India & Abroad. We are manufacturer, supplier & exporter of lab equipment & trainer kits for the experimental labs of Mechanical, Electronics & Robotics Labs.

Established in the year 2011, we, "Nebula Equipments Pvt. Ltd", are one of the eminent ISO 9001:2008 certified Manufacturer, Exporter and Supplier of a superior quality range of Mechanical, Electronics and Robotics Lab Equipment. Located at Indore (Madhya Pradesh, India), we are equipped with modern infrastructure facilities and technologies at our end that help in the production of Mechanical & Electronics Lab Equipment as per the market demand.

We have been constantly providing complete satisfaction to our clients in terms of performance and durability of our products. Along with our advanced manufacturing facilities, we combine the immense expertise and experience of our professionals to offer a high quality range of products to the customers. Moreover, we offer customized products to the clients that are designed as per the details provided by the clients. Owing to our ethical business policies and principles, prompt deliveries, and competitive prices, we have gained a huge client base across the country.

### Highlights

- ◆ Complete portfolio of laboratory and research equipments.
- ◆ State-of-the-art production facility.
- ◆ Design, develop, manufacture and market lab equipment at competitive prices.
- ◆ Clearly defined range of experiments for learning objectives.
- ◆ Extensive use of real industrial components and parts to give our training systems a high degree of practical Relevance and precision.
- ◆ Maintain Accuracy & Repeatability.
- ◆ Clear and comprehensive experimental and operating manual for every product
- ◆ Installation and maintenance at the site with entire satisfaction to the customers.
- ◆ Robust design for reliable long-term use.
- ◆ Ready to use equipment.
- ◆ Computerized Version also available.



We offer complete & high quality range of Mechanical Labs. These Mechanical Labs are designed and developed from quality approved Raw-material that is sourced from the authentic vendor of the market in compliance with international quality standards. To ensure high quality. We offer these products in various specifications as per the needs of the clients.

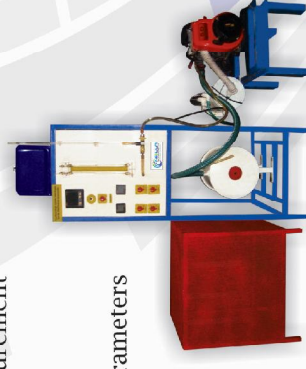
### Internal Combustion (IC) Engine Lab

#### Salient Features:

- ◆ Multi Channel Temperature Indicator
- ◆ Digital Voltmeter & Ammeter
- ◆ Air / Fuel Consumption Measurement
- ◆ Water Flow Measurement
- ◆ Loading arrangement: Rope brake /Hydraulic / Eddy Current / Electrical Dynamometer
- ◆ Load Measurement
- ◆ RPM Measurement / Exhaust Gas Calorimeter
- ◆ Crank Angle Measurement\* / Combustion Pressure Measurement\*
- ◆ Self\* / Manual Start / On/Off Switch & Indicators
- ◆ Esthetically Painted / Powder coated\*
- ◆ Computer Interface for measuring/observing various parameters
- ◆ Instruction Manual / Experimental setup schematic
- ◆ Measurement & Control Software

#### Range of products :

- ◆ Two Stroke Petrol / Diesel Engine Test Rig with Dynamometer
- ◆ Four Stroke Single Cylinder Petrol / Diesel Engine Test Rig with Dynamometer
- ◆ Four Stroke Multi Cylinder Petrol / Diesel Engine Test Rig with Dynamometer
- ◆ Variable Compression Ratio (VCR) Engine Test Rig with Dynamometer
- ◆ Actual cut section of Two Stroke Petrol Engine to plot Port Timing Diagram
- ◆ Actual cut section of Four Stroke Petrol Engine to plot Valve Timing Diagram
- ◆ Actual cut section of Four Stroke Diesel Engine
- ◆ Actual cut section of Multi Cylinder Petrol / Diesel Engine
- ◆ Exhaust Gas Analyzer / Digital Tachometer / Digital Sound Level Meter



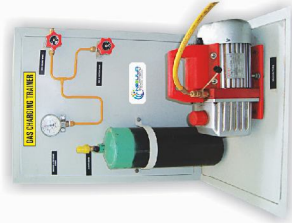
## Refrigeration & Air Conditioning Lab (RAC)

### Salient Features :

- ◆ Multi Channel Temperature Indicator
- ◆ Digital Voltmeter & Ammeter\*
- ◆ Flow Control Valves
- ◆ Safety HP / LP Switch\*
- ◆ Capillary / Thermostatic Expansion Valve\*
- ◆ Energy Meter
- ◆ Pressure Gauges / Filter Dryer
- ◆ Charging Valve
- ◆ Rotameter\* / Thermostat\*
- ◆ On/Off Switch & Indicator
- ◆ Computer Interface for measuring/observing various parameters
- ◆ Esthetically Painted / Powder coated\*
- ◆ Instruction Manual / Experimental setup schematic

### Range of products :

- ◆ Vapour Compression Refrigeration System
- ◆ Air Conditioning Test Rig
- ◆ Re-circulation type Air Conditioning Test Rig
- ◆ Window Air Conditioning Test Rig
- ◆ Electrolux Refrigeration (Vapour Absorption) Trainer
- ◆ Water Cooler Test Rig
- ◆ Ice Plant Test Rig
- ◆ Gas Charging Trainer
- ◆ Cooling Tower Test Rig
- ◆ Mechanical Heat Pump Test Rig
- ◆ Cold Storage Plant Test Rig
- ◆ Thermoelectric Refrigeration System Trainer
- ◆ Vortex Tube Cooling Apparatus with Air Compressor
- ◆ Cascade Refrigeration Cycle Test Rig
- ◆ Evaporative (Desert) Cooler Test Rig
- ◆ Actual cut section model of Compressor
- ◆ Display Board of various components used in RAC
- ◆ Refrigeration Gas Leak Detector
- ◆ Sling Hygrometer (DBT & WBT) Manual type
- ◆ Digital Humidity (DBT & WBT) & Temp. Meter
- ◆ Digital Anemometer
- ◆ Professional Refrigeration Tool Kit

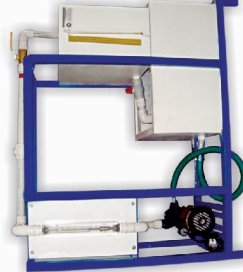


## Fluid Mechanics (FM) Lab

Backed by the rich industry experience and knowledge, we are offering an excellent range of Fluid Mechanics Lab. This machine is manufactured at our state-of-the-art manufacturing unit using high grade raw material sourced from reliable source of the industry. Our expert manufactures this product in both conventional and modern system to meet the exact needs of the clients. It is available in large quantity for the clients and can be availed at pocket friendly price by our renowned clients.

### Salient Features :

- ◆ Closed Circuit Design
- ◆ uPVC / GI\* piping arrangement
- ◆ Transparent Acrylic Test Sections
- ◆ Manometer for differential pressure measurement
- ◆ Suitable size Sump Tank & Measuring Tank with FRP coating
- ◆ Rotameter\*
- ◆ Control Valves – Brass / SS
- ◆ Tank material: M.S. with FRP coating / SS\*
- ◆ Bottom drain to improve Tank life
- ◆ Branded AC / DC Motor
- ◆ On/Off Switch & Indicator
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual



### Range of products :

- ◆ Pitot Tube Apparatus
- ◆ Venturi meter & Orifice Meter Apparatus
- ◆ Nozzle meter Apparatus
- ◆ Orifice & Mouthpiece Apparatus
- ◆ Reynold's Apparatus
- ◆ Metacentric Height of Ship Apparatus
- ◆ Losses in Pipes due to Friction (Darcy's Low Apparatus)
- ◆ Losses in Pipes (pipes with different material)
- ◆ Losses due to pipe fittings, sudden enlargement & contraction
- ◆ Bernoulli's Theorem Apparatus
- ◆ Rota meter Apparatus
- ◆ Impact of Jet on Vanes
- ◆ Discharge over Notches
- ◆ Free & Forced Vortex Apparatus
- ◆ Broad Crested Weir Apparatus

## Heat & Mass Transfer Lab (HMT)

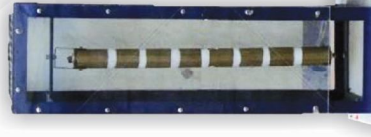
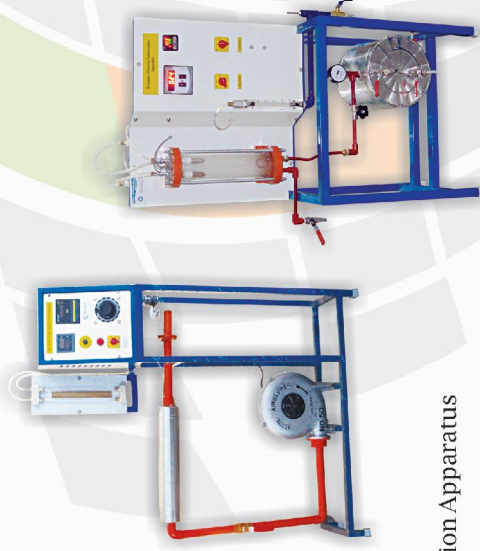
Backed by the rich industry experience and knowledge, we are offering an excellent range of Heat & Mass Transfer Lab. This lab is designed at our state-of-the-art manufacturing unit using high grade basic material sourced from reliable sources of the industry. We offer this product in various specifications as per the needs of the clients and within promised time-frame at rock bottom price.

### Salient Features :

- ◆ Multi Channel Temperature Indicator
- ◆ Digital Voltmeter & Ammeter
- ◆ Dimmerstat
- ◆ On/Off Switch & Indicator
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual
- ◆ Experimental setup schematic

### Range of products :

- ◆ Heat Transfer through Natural Convection Apparatus
- ◆ Heat Transfer through Forced Convection Apparatus
- ◆ Heat Transfer through Pin-Fin Apparatus
- ◆ Parallel Flow/Counter Flow Heat Exchanger Apparatus
- ◆ Shell & Tube Heat Exchanger
- ◆ Calibration of Thermocouples Apparatus
- ◆ Emissivity Measurement Apparatus
- ◆ Stefan Boltzman's Apparatus
- ◆ Thermal Conductivity of Metal Rod Apparatus
- ◆ Thermal Conductivity of Insulating Slab
- ◆ Thermal Conductivity of Insulating Powder
- ◆ Thermal Conductivity of Liquids
- ◆ Heat Transfer Through Lagged Pipe
- ◆ Heat Transfer Through Composite Walls
- ◆ Heat Pipe Demonstrator
- ◆ Drop & Film Wise condensation apparatus

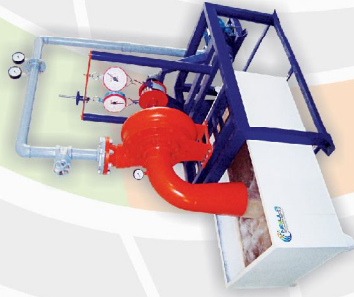


## Hydraulic Machine Lab

We offer a high quality Hydraulic Machine Lab, designed and developed by our highly skilled engineers at our well equipped manufacturing unit by using superior quality material and other raw material in compliance with the set industrial norms. Our offered lab is available in various designs and sizes to meet the diverse requirements of our valuable clients. Further, our clients can avail these labs within a set time - frame from us.

### Salient Features :

- ◆ Closed Circuit Design
- ◆ Gipping arrangement
- ◆ Transparent Acrylic Test Sections
- ◆ Manometer for differential pressure measurement
- ◆ Pressure Gauges
- ◆ Suitable size Sump Tank & Measuring Tank with FRP coating
- ◆ Rotameter\*
- ◆ Control Valves – Brass / SS
- ◆ Tank material: M.S. with FRP coating / SS\*
- ◆ Bottom drain to improve Tank life
- ◆ Branded AC / DC Motor
- ◆ On/Off Switch & Indicator
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual
- ◆ Experimental setup schematic



### Range of products :

- ◆ Centrifugal Pump Test Rig
- ◆ Reciprocating Pump Test Rig
- ◆ Hydraulic Ram Test Rig
- ◆ Pelton Wheel Turbine Test Rig
- ◆ Francis Turbine Test Rig
- ◆ Kaplan Turbine Test Rig
- ◆ Hydraulic / Tilting Flume Test Rig
- ◆ Multistage Centrifugal Pump Test Rig
- ◆ Submersible Pump Test Rig
- ◆ Series & Parallel Pump Test Rig
- ◆ Wind Tunnel Test Rig



## Automobile Lab

With our rich industry experience and knowledge, we are engaged in offering high quality Automobile Lab. This technologically sound range of cut sectional/cross sectional demonstration models is highly demanded due to its dimensional accuracy, unique design and motorized operation.

### Salients Features :

- ◆ High precision Actual Cut-Sections
- ◆ Working of all Internal parts shown
- ◆ Different color / shade internal parts for better understanding.
- ◆ Many parts having Chroming Plated / Galvanized for longer life
- ◆ Manual / Motorized models
- ◆ Sturdy M.S. frame
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual
- ◆ Experimental setup schematic

### Range of products :

- ◆ Demonstration Car Chassis
- ◆ Actual Car steering Demonstration Model
- ◆ Actual cut section of Gear Box :
- ◆ Contact Mesh / Sliding Mesh / Synchro Mesh / Automatic gear box
- ◆ Actual working model of Independent Suspension System :
- ◆ Two Wheeler / Four Wheeler
- ◆ Actual Cut Section of Clutches :
- ◆ Claw Clutch / Single Plate / Multi Plate
- ◆ Actual Working Model of Steering of Car :
- ◆ Rack & Pinion / Recirculate Ball / Power Steering / Worm and roller type
- ◆ Actual cut section of Differential Gear Assembly
- ◆ Actual Cut Section of Carburetor
- ◆ Actual working model of Disc Brake
- ◆ Actual Cut Section of Mechanical Brake
- ◆ Fuel Supply system of Petrol Engine (Two Wheeler)
- ◆ Fuel Supply system of Diesel Engine (Four Wheeler)
- ◆ Spark ignition system
- ◆ Actual Cut section model of Diesel / Petrol injection system
- ◆ Set of various springs used in automobile
- ◆ Actual Cut section model of Fuel Pump of diesel engine
- ◆ Mock layout of a (Electrical system of an automobile) working model (Two Wheeler)
- ◆ Demonstration board of Electrical Ignition system of an automobile (Four Wheeler)



## Thermodynamics Lab

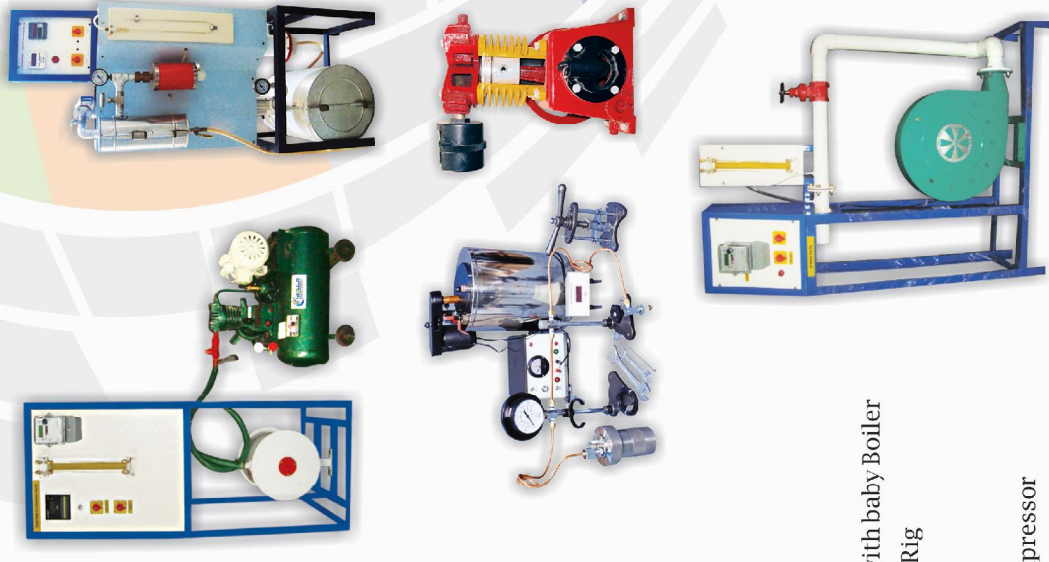
We are amongst the leading industries in the domain, engaged in offering high quality Thermodynamics Lab. It is fabricated using best quality raw material as per the set industry norms under the supervision of our experienced professionals. In order to meet the precise needs of the clients, this is available in different specifications and can be custom design as per requirements of the clients. In order to deliver flawless range, our quality analyst strictly checks this lab on various predefined industry norms.

### Salients Features :

- ◆ Digital Voltmeter & Ammeter
- ◆ Energy Meter
- ◆ Dimmerstat
- ◆ RPM Measurement
- ◆ Rotameter
- ◆ Air Flow Measurement
- ◆ Pressure Measurement
- ◆ High quality insulation on Boiler
- ◆ ISI mark Compressor
- ◆ Branded AC / DC Motor
- ◆ On/Off Switch & Indicator
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual
- ◆ Experimental setup schematic

### Range of products :

- ◆ Single Stage Air Compressor Test Rig
- ◆ Two Stage Air Compressor Test Rig
- ◆ Rotary Air Compressor Test Rig
- ◆ Centrifugal Air Compressor Test Rig
- ◆ Centrifugal Blower Test Rig
- ◆ Separating & Throttling Calorimeter with baby Boiler
- ◆ Horizontal & Vertical Condenser Test Rig
- ◆ Bomb Calorimeter
- ◆ Air Flow in Duct & Pipes Apparatus
- ◆ Actual working cut section of Air Compressor



## Theory of Machine Lab (TOM) / Dynamics of Machine Lab (DOM)

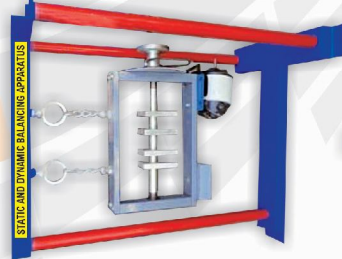
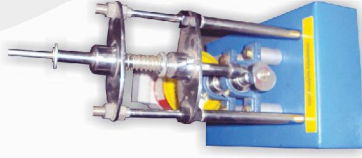
The offered machine is developed using premium quality of raw material in accordance with the set parameters of the industries. It is available in a variety of sizes and designs. This machine is widely appreciated for its flawless range. Our renowned customers can avail these lab at the most affordable prices from us. We further check this lab on various parameters as per the set international standards.

### Salient Features :

- ◆ Digital Voltmeter & Ammeter
- ◆ Dimmerstat
- ◆ RPM Measurement
- ◆ Rotameter
- ◆ Angular Measurement
- ◆ Branded AC / DC Motor
- ◆ On/Off Switch & Indicator
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual
- ◆ Experimental setup schematic

### Range of products :

- ◆ Whirling of Shafts Demonstrator
- ◆ Cam Analysis Apparatus
- ◆ Epicyclic Gear Train Apparatus
- ◆ Motorized Gyroscope
- ◆ Journal Bearing Apparatus
- ◆ Universal Governor Apparatus
- ◆ Static & Dynamic Balancing Apparatus
- ◆ Coriolis's Component of Acceleration
- ◆ Slip & Creep measurement in Belt Drive

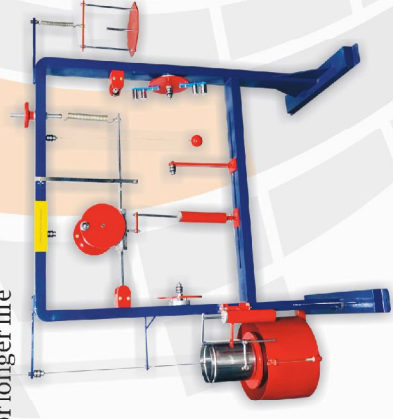


## Vibration Lab

We offer high quality Vibration test systems for the measurement of various types of mechanical vibrations. Our Vibration testing lab is designed for the accurate measurement of low & high vibrations in tough working environment.

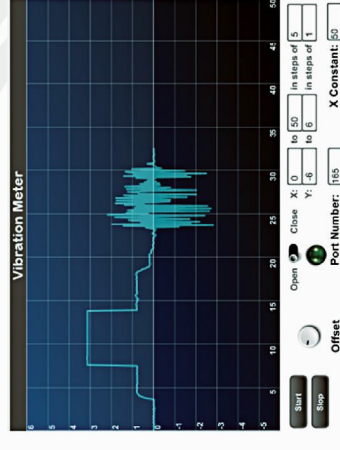
### Salient Features :

- ◆ Low cost High precision Vibration Measurement solution
- ◆ Standard Vibration Measurement Hardware & Software Console
- ◆ Accurate measurement of low vibrations with software
- ◆ Many parts having Chroming Plated / Galvanized for longer life
- ◆ Digital RPM measurement
- ◆ Dimmerstat
- ◆ Branded DC Motor
- ◆ On/Off Switch & Indicator
- ◆ Digital Stop Watch
- ◆ Sturdy M.S. Channel frame
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual
- ◆ Experimental setup schematic



### Range of products :

- ◆ Universal Vibration Apparatus with Computer interface
- ◆ Undamped / damped Torsional Vibration of Single Rotor
- ◆ Simple Pendulum
- ◆ Compound Pendulum
- ◆ Cantilever Apparatus
- ◆ Undamped / damped Apparatus
- ◆ Forced / Free Vibration Apparatus
- ◆ Double Rotor Apparatus
- ◆ Digital Vibration Meter

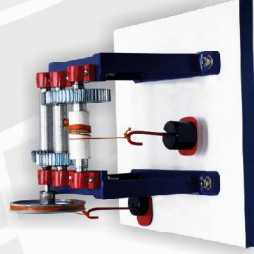


## Mechanical Engineering Models

Specially designed models to understand actual working of various parts, machines and process of mechanical engineering. All parts are made up of metals & alloys and is properly machined. These models are fully functional and is mounted on a wooden base.

### Range Of Products :

- ◆ Applied Mechanics
- ◆ Gear Models
- ◆ Mechanism Models
- ◆ Cam & Follower Models
- ◆ Brake Models
- ◆ Belt Pulley Models
- ◆ Bearing Models
- ◆ Key & Joints Models
- ◆ Coupling Models
- ◆ Clutch Models
- ◆ Screw & Nut Models
- ◆ Gyroscope Models
- ◆ Turbines & Pumps
- ◆ Boiler Models
- ◆ Mountings & Accessories Of Steam Boilers
- ◆ Steam Engine Models
- ◆ Governor Models
- ◆ Working Models Of Petrol & Diesel Engine
- ◆ Steam Turbine Models
- ◆ Steam Condenser Models
- ◆ Electrical Equipment Boards Of Automobile
- ◆ Fuel Supply Systems Of Automobile
- ◆ Models Of Steering
- ◆ Gear Box Models
- ◆ Differential Gear Models
- ◆ Working Models Of Different Brakes
- ◆ Actual Cut Section Carburetors & Automobile Parts



## Measurement & Control System Lab

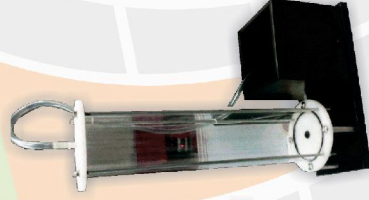
We are amongst the leading industries in the domain, engaged in offering high quality Measurement & Control System Lab. It is fabricated using best quality raw material as per the set industry norms under the supervision of our experienced professionals. In order to meet the precise needs of the clients, this is available in different specifications and can be custom design as per requirements of the clients. In order to deliver flawless range, our quality analyst strictly checks this lab on various predefined industry norms. Specially design for Mechanical Engineers for easy understanding of complex Electronics / Electrical circuits.

### Salient Features :

- ◆ Compact Design
- ◆ Circuit Schematic
- ◆ Industrial component for better understanding
- ◆ Simulation software\*
- ◆ Aluminum Panel Design\*
- ◆ Esthetically Painted / Powder coated\*
- ◆ Experimental Manual

### Range of products :

- ◆ Temperature Measurement Trainer
- ◆ Pressure Measurement Trainer with Software
- ◆ Flow Measurement Trainer with Software
- ◆ Level Measurement Apparatus based on Capacitance Type Sensor
- ◆ Level Measurement Apparatus based on Ultrasonic Sensor
- ◆ Control System Trainer with simulation software
- ◆ Advanced PLC Trainer with application interface cards
- ◆ Basic PLC Trainer
- ◆ Pneumatic System Trainer
- ◆ Hydraulic System Trainer
- ◆ Load Cell Trainer
- ◆ Data Acquisition Trainer with software
- ◆ Angular velocity measurement Trainer
- ◆ LVDT (Linear variable differential transformer) Trainer
- ◆ Vibration Measurement Trainer
- ◆ Pony Brake Dynamometer Test Rig
- ◆ Digital Manometer
- ◆ Laser Distance Meter
- ◆ RH-Temp. Data Logger
- ◆ Digital Multi meter

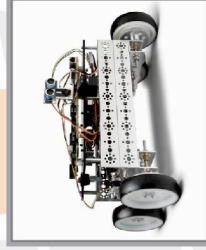


### Features :

- ◆ High Precision Low Cost Robots
- ◆ FMS/CIM Supported Robots\*
- ◆ Special Designed Gripper
- ◆ Many Sensor options
- ◆ Wireless Control Supported\*
- ◆ Advance Programming / Controlling Software
- ◆ Simple Programming Codes
- ◆ PLC/CNC/Matlab/Labview interface\*
- ◆ USB Connectivity
- ◆ Esthetically Painted / Powder coated\*
- ◆ Exhaustive Course Material & References

### Range of products:

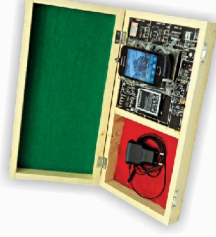
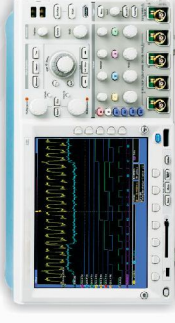
- ◆ Flexible Manufacturing System (FMS) consists of:
  - \* Robotic Arm
  - \* PC based CNC Machine
  - \* Conveyor Belt assembly
  - \* Various industrial sensors
  - \* Fault insertion switches
  - \* Controlling Software
  - \* Matlab / Labview interface
- ◆ 4 Axis Cylindrical Robot Arm
- ◆ 4 Axis SCARA Robot
- ◆ 5 Axis Industrial Robotic Arm Trainer
- ◆ 5 Axis Servo Based Robotic Arm Trainer
- ◆ 6 Axis Cartesian Gantry Robotic Trainer
- ◆ Robot Designing Kit: \* Set of 5 / 10 / 15 different robots
- ◆ Universal Robotics Development Platform / Arm Kit
- ◆ GOLBO Robot
- ◆ Hexapod Robot
- ◆ Robotics in 10 Days (self learning kit)
- ◆ Mobile Multifunctional Robot
- ◆ Conveyor Belt Assembly
- ◆ MATLAB based ROBONOVA
- ◆ MATLAB Workbook
- ◆ Quark-Servo based Hexapod
- ◆ Hand Gesture recognition and replication robot



We are a distinguished manufacturer, exporter and supplier of Electronics Lab. This lab is designed using high grade component under the guidance of skilled professionals in compliance with international standards. The offered range of lab is highly appreciated for its sturdy construction, advanced tools, user friendliness and longer life. We offer this lab in different specifications to fulfill the diverse needs of clients' at most affordable price.

### Laboratories :

- ◆ Basic Electronics Lab
- ◆ Amplifiers & Oscillators
- ◆ Network & Theorem Lab
- ◆ Digital Electronics Lab
- ◆ Analog Communication Lab
- ◆ Digital Communication Lab
- ◆ Fiber Optic Communication Lab.
- ◆ Advanced Communication Lab
- ◆ Instrumentation & Control Lab
- ◆ VLSI & Embedded Lab
- ◆ Microwave Lab
- ◆ Antenna & Radar Lab
- ◆ PCB Lab







Electronics | Mechanical | Robotics

## NEBULA EQUIPMENTS PVT. LTD.

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