Computerized Mini Steam Turbine Power Plant (Product Code: MSTC01)



Features

- Comprehensive facility for complete investigation of steam power plant.
- Major components utilized are of standard industrial practice.
- Self-contained single base assembly greatly reduces space and installation requirements.
- Low capital cost & Low fuel maintenance costs.
- Control console incorporating instrumentation schematic for complete operation.
- Rapid start-up for effective use of laboratory time.
- All the measured parameter is connected to the computer.

Product Description

Steam Power Plant is designed as a comprehensive self-contained unit with all relevant items of equipment factory mounted on a common steel bedplate. This modular construction and assembly greatly reduces space and installation requirements. The plant can operate as a steam boiler, complete power plant, and has been specifically designed to facilitate student comprehension and operation. This is achieved through relaying all instrumentation and controls to a central console incorporating a schematic diagram of the complete Steam Power Plant System. All the measured parameters is connected to the computer.

The panel is fabricated with suitable SWG CR sheet and as per IS standard; the front portion of the panel consists of computer, Printer, UPS and storage space for books and others. The rear portion of the panel consists of all instrumentations and signal conditioner related components. Power and control wiring are suitably marked using ferule for easy troubleshooting. A standard circuit drawing is normally pasted behind the panel door. The panel is finished with powder coating.

Software (Steam Power Plant performance analysis)

Windows based powerful software for real time data measurement, auto zoom graphs, analog and digital display of data in the computer, store indefinite no of graphs for analysis. The data acquisition software is developed by legion brothers.

Plot No: 34/G, 4TH Main 3RD Phase Peenya Industrial Area, Bangalore - 560 056.
Ph.: +91 9740987814
Email: info@legionbrothers.com, sales@legionbrothers.com. www.legionbrothers.com

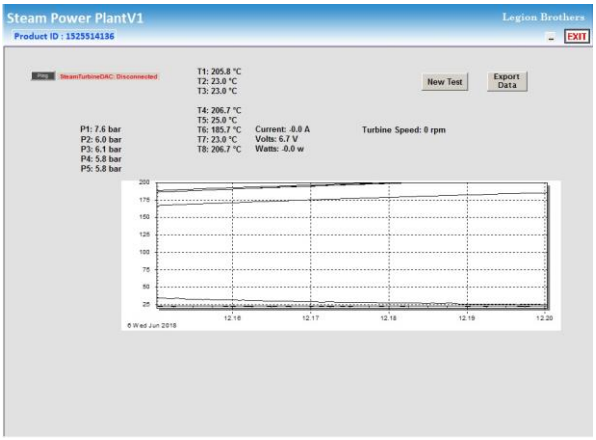
Computerized Mini Steam Turbine Power Plant (Product Code: MSTC01)

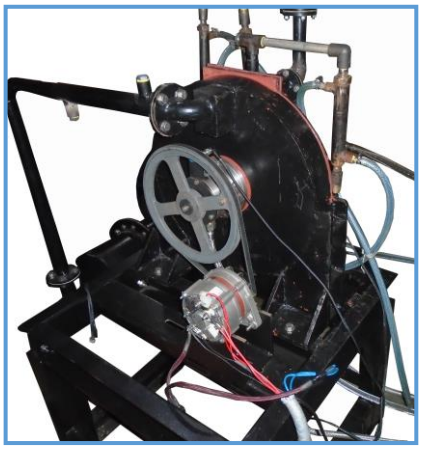
Product / Component Specification

Product	Computerized Mini Steam Turbine Power Plant	
Product code	MSTC01	
Turbine	Make	: Legion Brothers
	Designation	: Single Stage, Single Row, Single Nozzle
	Speed	: 1000-3000 Rpm
	Power	: 500 Watts
	Operating Pressure	: 4-6 Bar
Dynamometer	Type	: DC Generator
	Cooling	: Air cooled
	Capacity	: 750 Watts (14.5V)
	Speed	: 3000 Rpm
Steam Boiler	Make	: Thermax
	Evaporation	: 400Kg/hr.
	Steam Pressure	: 10.5 Bar
	Steam Temperature	: 185^0C
	Efficiency	: 86%
	Fuel Consumption	: 24Kg/hr.
	Electric Supply	: 3 Phase, 415/380V , 50Hz
	Total Connected load	: 2.2Kw (Blower, Feed pump, Fuel pump)
Condenser	Shell & Multi tube type -Mild steel powder coated	
Coupling	Belt	
Panel	Mild steel powder coated with provision for mounting computer, ups, printer and instrumentation	
Base frame & Tank frame	C channel & Square tube-Mild steel	
Water Tank	Capacity-1000 liters	
Fuel Tank-Diesel	Capacity-100 liters	
Water Treatment Unit	Water Softener, Feed pump & 100 liter Container	
Dynamometer load	Lamp Loading	
Temperature	“k” type with inline signal transmitter	
Pressure	Piezo Resistive 0-20 Bar	
Water flow-Boiler	Water flow meter	
Water flow-Condenser	Rota meter-Acrylic	
Daq	200 Ks/s	
Software	Turbine test express for Turbine performance software	

Plot No: 34/G, 4TH Main 3RD Phase Peenya Industrial Area, Bangalore - 560 056.
Ph.: +91 9740987814
Email: info@legionbrothers.com, sales@legionbrothers.com. www.legionbrothers.com

Turbine Software





Measurement of Pressure at different points

Type Range Signal conditioning/transmitter Location	Piezo Resistive 0-20 Bar Standalone Boiler Steam Outlet Pressure
Type Range Signal conditioning/transmitter Location	Piezo Resistive 0-20 Bar Standalone Turbine Inlet Pressure
Type Range Signal conditioning/transmitter Location	Piezo Resistive 0-20 Bar Standalone Condenser Vacuum Pressure
Type Range Signal conditioning/transmitter Location	Piezo Resistive 0-20 Bar Standalone Orifice Inlet Pressure
Type Range Signal conditioning/transmitter Location	Piezo Resistive 0-20 Bar Standalone Orifice Outlet Pressure

Measurement of Voltage & Current

Type Range Signal conditioning/transmitter	Voltage Transducer 0-24V Standalone
Type Range Signal conditioning/transmitter	Current Transducer 0-30Amps Standalone

Measurement of Temperatures at different points

Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Boiler Feed water Temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Condenser Steam Inlet Temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Condenser Steam Outlet Temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Condenser Water Inlet Temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Condenser Water Outlet Temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Ambient Temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Boiler Steam temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300^{o}C Standalone Fuel temperature

Plot No: 34/G, 4TH Main 3RD Phase Peenya Industrial Area, Bangalore - 560 056.
Ph.: +91 9740987814
Email: info@legionbrothers.com, sales@legionbrothers.com. www.legionbrothers.com