

Product Name :
Astra Scientific Two Shaft Gas Turbine Engine Test Bench

Product Code :
ThermalLab0018



Description :

Astra Scientific Two Shaft Gas Turbine Engine Test Bench

Technical Specification :

The self-contained, fully instrumented, educational two-shaft gas turbine. Powered by kerosene, the experimental abilities of this high-quality apparatus enable comprehensive practical investigations into the principles, and performance of two-shaft gas turbines.

This product helps students to understand the use of this 'engine' with a secondary power turbine, on practical applications such as helicopters or electrical power generators.

Air passes through a calibrated nozzle and air box, into a compressor, then into the combustion chamber. A pump transfers fuel from the fuel tank to spray through a special nozzle into the combustion chamber. A high-energy spark ignites the air and fuel mixture that flows to a gas generator turbine. The combustion chamber gives excellent combustion, low-pressure loss and good flame stability over a wide range of conditions. A fuel flow control valve on the instrumentation and control panel regulates the turbine speed. This design reduces the possibility of over speed.

A steel frame holds a gas generator, power turbine, combustion chamber,

oil and fuel tanks, pumps, ancillaries and guards. Above these is an instrumentation and control panel with schematic diagram. The clearly labeled control panel with mimic diagram includes the instrument displays, controls and warning lights.

FEATURES:

- Specific fuel consumption
- Pressure losses and ratios
- Thermal, isentropic and mechanical efficiencies
- Work and power

SPECIFICATION:

- Small two-shaft gas turbine engine with radial flow compressor and axial flow turbine as in modern power generation industry. First shaft is gas generator similar to the Gas Turbine engine, providing hot gas for a single-stage axial flow turbine. Hot gas is discharged axially to a larger power turbine of the second shaft and exhausts to the atmosphere.
- Automatic front motor starter. Ceramic bearings, lubrication through mixing lubricant oil with fuel.
- Hydraulic, water-cooled dynamometer.
- Sensors and indicators for:

temperatures, pressures, speeds, torque, fuel flow rate, airflow rate.
Hour meter for logging operating hour. Human-Machine interface with touch screen.

- 220V, 1ph, 50Hz or as requested.



Astra Scientific

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