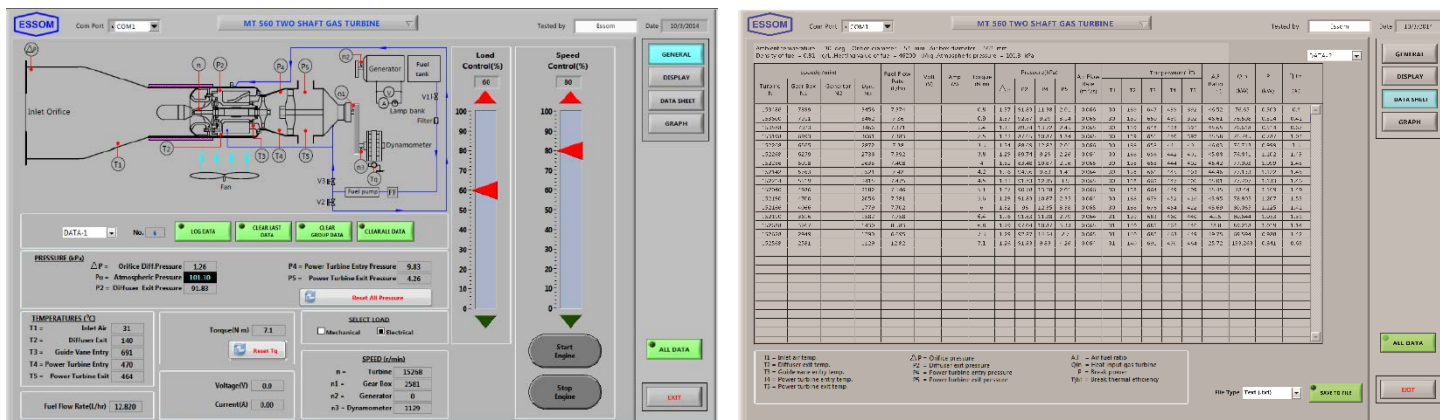


MT 560 TWO-SHAFT GAS TURBINE



Photograph includes optional equipment



GENERAL DESCRIPTION:

The turbine is a small two-shaft gas turbine engine with a radial flow compressor and axial flow turbines as in the modern gas turbine power plant.

The first shaft is a hot gas generator. Inlet air through an orifice flow measuring device is compressed by a single stage radial flow compressor. The turbine is motor started and runs on Jet A fuel. Fuel is injected by a fuel pump and ignited in the combustion chamber providing hot gas for a single stage axial flow turbine which in turn drives the compressor. The hot gas is discharged axially to a larger power turbine on the second shaft and exhausts to atmosphere. A fan is provided for cooling the gear box.

Speed of the power turbine is reduced by the gear box. A water brake absorber is connected to the gear box for power measurement. The brake requires outside water supply. Load is manually controlled.

An Electronic Control Unit (ECU) controls the basic turbine operation. Additional instruments are provided for monitoring and controlling turbine performance.

A touch screen computer with an interface unit and software are provided for speed and load control, data display and analysis, and to assist the ECU.

Safety features include clear acrylic cover, gas generator over speed shutdown, power turbine over speed protection and power turbine entry over temperature shut down. The unit is floor standing with removeable supports.

Instruction manual is also included.

EXPERIMENT CAPABILITIES:

- Understanding the thermodynamic process.
- Torque vs speed.
- Power input and output and engine efficiency.



TECHNICAL DATA:

- Gas generator construction
 - Diffuser : High strength aluminium.
 - Combustion chamber : Stainless steel .
 - Bearings : Ceramic ball bearing.
 - Turbine wheel : Vacuum cast inconel.
 - Compressor : High grade aluminium alloy.
- Gas generator
 - Starting and running fuel : Jet A or kerosene with jet oil.
- Power turbine
 - Turbine wheel : Vacuum cast inconel,
 - Interstage guide vane : Stainless steel.
- Gear box
 - Type : Planetary.
 - Lubrication : Jet A.
- Dynamometer
 - Type : Water brake absorber .
 - Maximum power : Approx. 5 kW.
- Gear box and dynamometer connection. : Direct coupling
- Output power
 - Mechanical : Approx. 700 W.
- Sensors
 - Temperatures : Inlet air, diffuser exit, gas generator turbine entry, power turbine entry and exit.
 - Pressures : Diffuser exit, power turbine entry and exit.
 - Speeds : Gas generator and gear box output shaft.
 - Dynamometer torque.
 - Fuel flow rate.
 - Air flow rate : Differential pressure at inlet orifice.
- Accessories : Engine cooling fan
: Gear box cooling fan
: Engine exhaust duct
: 2 Ear muffs
: Jet oil
: Barometer
- Software for data display, analysis and control by computer (separately supplied)
- Power supply : 220V, 1 Ph, 50Hz. Other power supply is available on request.

OPTIONAL EQUIPMENT

- MT560-014 Dynamometer water cooling unit with pump instead of outside water supply.
- Other optional equipment, please contact manufacturer (essom@essom.com)

Net (unpacked) shipping dimensions WxLxH : 100 x 125 x 110 cm
Net weight : Approx. 165 kg