

## MT 553 TURBO JET ENGINE, 200N Thrust

### GENERAL DESCRIPTION:

The engine is a small turbo jet engine with radial flow compressor and an axial flow turbine as in modern jet plane.

Inlet air through an orifice flow measuring device is compressed by a single stage radial flow compressor. The turbine is air started and run on jet A fuel. The turbine unit is complete with control and monitoring instruments including engine data terminal and automatic start unit. The turbine runs on ceramic bearings. Lubrication is provided by jet oil in the fuel, and no separate lubrication system is required.

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

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

Transparent engine cover and over speed shut down are provided.



### EXPERIMENT CAPABILITIES:

- Understanding the thermodynamic process
- Static thrust vs turbine speed
- Power input and output and propulsive efficiency.

### TECHNICAL DATA:

- Engine construction
  - Diffuser : High strength aluminium.
  - Combustion chamber : Inconel.
  - Shaft : High strength steel.
  - Turbine : Vacuum cast inconel.
  - Compressor : High grade aluminium alloy.
- Engine performance specifications.
  - Maximum static thrust : Upto 220 N at approx 108,000 rpm.
  - Running fuel : Jet A or Kerosene with jet oil.
- Sensors :
  - Temperatures : Inlet air, diffuser exit, turbine guide vane entry and exit and nozzle exit.
  - Pressures : Diffuser exit and turbine exit.
  - Thrust.
  - Speed.
  - Fuel flow rate.
  - Air flow rate : Inlet orifice with differential pressure sensor.
- Accessories : Engine cooling fan, 2 ear muffs, jet oil and barometer.
- Power supply : 220V 1Ph 50Hz. Other power supply is available on request.

**Net (unpacked) shipping dimensions WxLxH**

: 85 x 115 x 60 cm

**Net weight**

: Approx. 70 kg