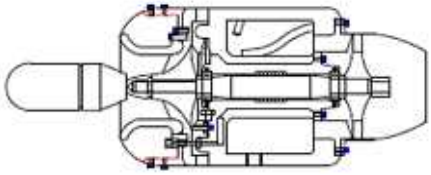
OSC 77FD550MT Turbo Jet Engine, 40N Thrust



Turbine diagram

Photograph includes optional equipment

<Features>

-The engine is a bench top unit for a small turbo jet engine and modified for educational purpose
-The unit has a radial flow compressor and an axial flow turbine as in the modern aviation industry
-Inlet air through an orifice flow measuring device is compressed by a single stage radial flow compressor
-The turbine is started by Liquefied Petroleum Gas (LPG) and run by Jet A fuel
-Fuel is injected and ignited in the combustion chamber providing hot gas for a single stage axial flow turbine
-The gas is exhausted through a nozzle at high velocity providing a thrust
-The turbine unit is complete with automatic front motor start, and runs on ceramic bearings
-Lubirication 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 instruments are provided for monitoring and controlling engine operation and performance
-For safety reason, an over speed sensor and steel bars aroung the compressor and turbine sections are provided

<Experiment capability>

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

<Specifications>

Model	OSC 77FD 550MT
Engine construction	Engine diameter 90mm, length 168mm w/o motor
	Diffuser : 7075 aluminium
	Combution chamber : 316 stainless steel with inconel vaporizing tube
	Bearing : Ceramic ball bearing
	Shaft : EN24 grade steel
	Turbine : Vacuum cast inconel, 54mm diameter
	Compressor : Garrett high grade aluminium alloy
	Motor start : Aluminium casting, copper clutch assembly, ball bearing motor
Engine performance	Maximum static thrust : over 40N
	Idle thrust : 2N approx.
	Maximum speed : Upto 160,000 rpm
	Running fuel : Kerosene or Jet A with 6 % jet oil
	Starging fuel : Liquefied Petroleum Gas (LPG) in 4kg cylinder with a pressure (oprion)
Sensors and indicators	Temperature : 4 ea for compressor entry, compressor exit, turbine entry, nozzle exit Pressure : 2ea for compressor exit, turbine exit Thrust, Speed, Fuel flow rate Air flow rate : Inlet orifice with differential pressure sensor
Power supply	220V, 1Ph, 50Hz. Other power supply is available
Size (WxLxH)	Approx. 750 x 1100 x 1500 **mm**
Weight	Approx. 110kg

OSC 77FD550MT Optional Accessories

<Optional Accessories>

505-015AMT Air flow sensor and indicator instead of inlet orifice with differential pressure sensor and indicator

550-002MT Silencer unit with stand

550-005MT Indicators are replaced by a human mechine interface (HMI) unit with input/output module and software for data display, analysis and to assist the ECU

Display Sensor data
Charactaristics curve of thrust vs speed

Human machine interface (HMI) unit

Display : 262K TFT LCD, 800x600 resolution

Input/output interface :4COM ports, 1 parallel port, 4 USB ports, VGA port