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## Re: Olympus HP in University configuration.

The Olympus HP engine is in production since middle of 2004, already quickly after it was launched there came requests from universities and research institutes to modify this engine to an engine with measuring points.

The “**standard**” measuring points we offer for the Olympus HP are :

### Temperature:

Tt3 - Temperature measurement behind diffuser stage.

Tt4 - Temperature measurement before nozzle guide vanes.

Tt5 - Temperature measurement after turbine wheel.

Tt6 - Temperature measurement at exhaust nozzle.

### Pressure:

Ps3 - Static pressure behind diffuser stage.

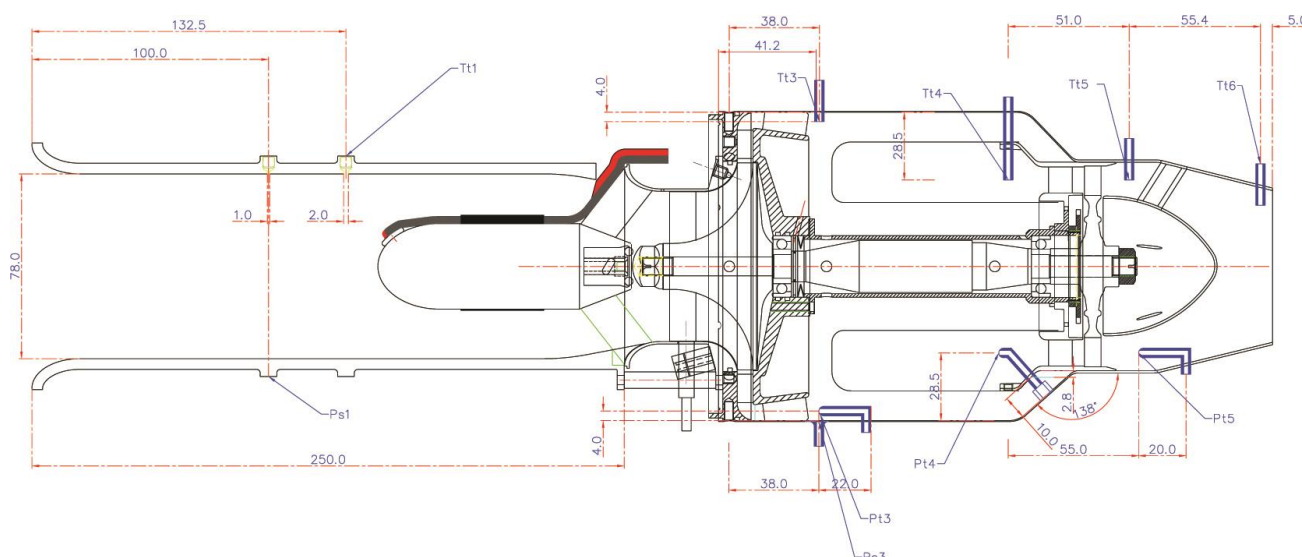
Pt3 - Total pressure behind diffuser stage.

Pt4 - Total pressure before nozzle guide vanes.

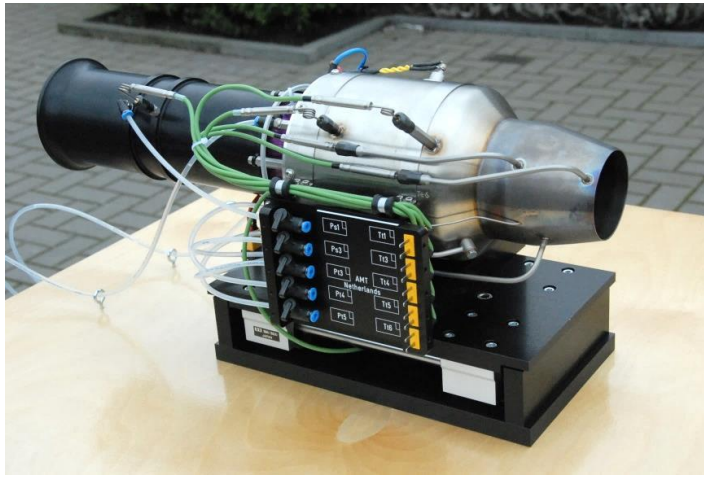
Pt5 - Total pressure after turbine wheel.

### 2016 update

Since 2016 the Olympus HP engine can be equipped with an “extended intake” which include measuring positions Tt1 and Ps1 to measure “mass flow” of the engine.



Together with the extended intake, mass flow data will be supplied.



(Picture above)

Picture of the Olympus HP engine in the “university” configuration, on request AMT-NL can manufacture other configurations.



(Picture right)

Possible layout of a complete engine test stand.

### Engine control:

The Olympus HP engine is operated within certain parameters with an Electronic Control Unit (ECU), the ECU accepts commands from the operator (throttle and switch channel) and will “drive” all the axillary equipment like fuel pump, valves, starter motor, etc.



An standard ECU has control inputs (throttle and switch) which work with PWM signals between 1.0 and 2.0 milli second, or with a rs-232 serial protocol. Especially for the use in a laboratory environment the ECU can be modified to work for both control inputs with DC signals between 0.0 and 5.0 volt, such a ECU is called a “analog ECU”.

Such an analog ECU can be operated with an analog control box which and has a throttle knob 0-100 % and a switch to operate the ECU. (see picture)

With a software switch this ECU can also be operated by a rs-232 serial protocol. This software switch can be activated the operator.

Analog control box cable has a standard length of 2 meter, max length is 10 meters. (specify at ordering)



### Pricing:

The price of the “University Olympus HP” depends on the configuration of the system.

AMT Netherlands offers a standard range of measuring points as mentioned above but on request other measuring points can be offered.

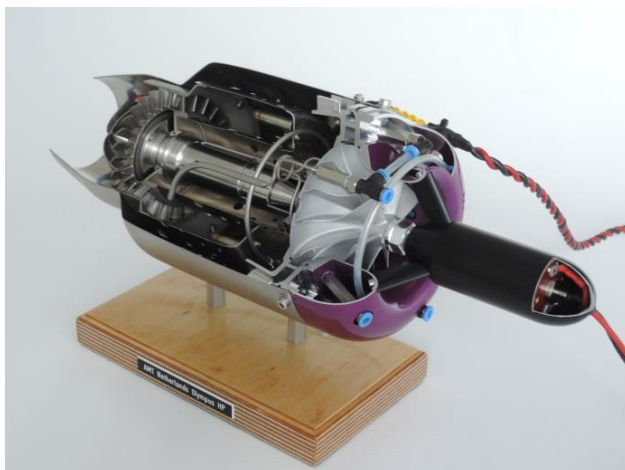
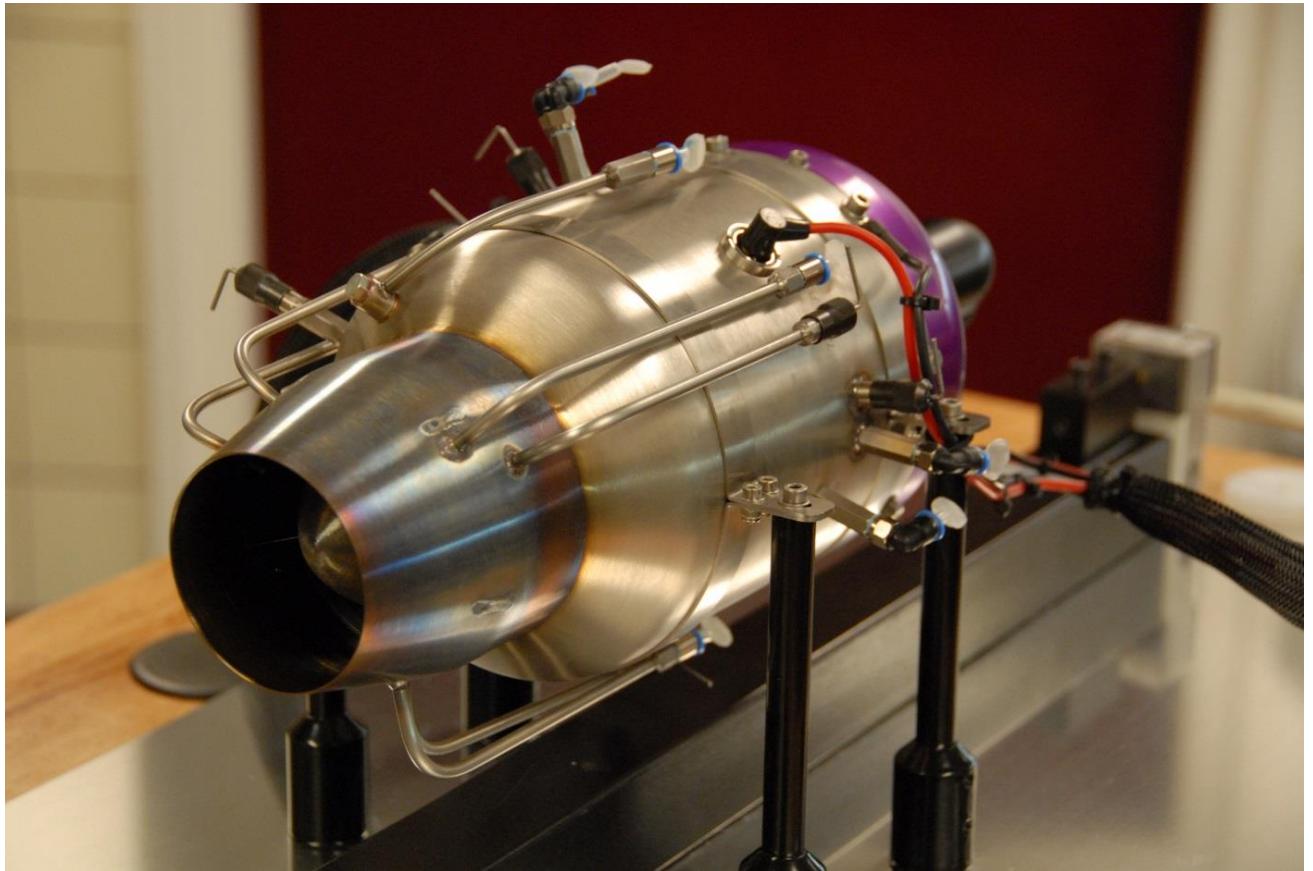
## Basic retail pricing\* (2018)

(For all customers inside EU without VAT number add 21% VAT)

1 x Olympus HP direct kerosene start including EDT	5690,- Euro
1 x Modification for "analog" ECU	100,- Euro
1 x Analog control box	143,- Euro
1 x Long intake to measure mass flow + measuring positions	1284,- Euro
1 x All <b>standard</b> measuring positions**	1644,- Euro

\*\* A calculation can be offered for additional measuring positions.

A option is to multiply al measuring point by 3 to have more accurate measuring possibilities, as shown on the picture below. This configuration was made on customer's request.



Cut-out of an Olympus HP engine.



Olympus HP University configuration at FH Aachen (University of Applied Sciences, Germany)