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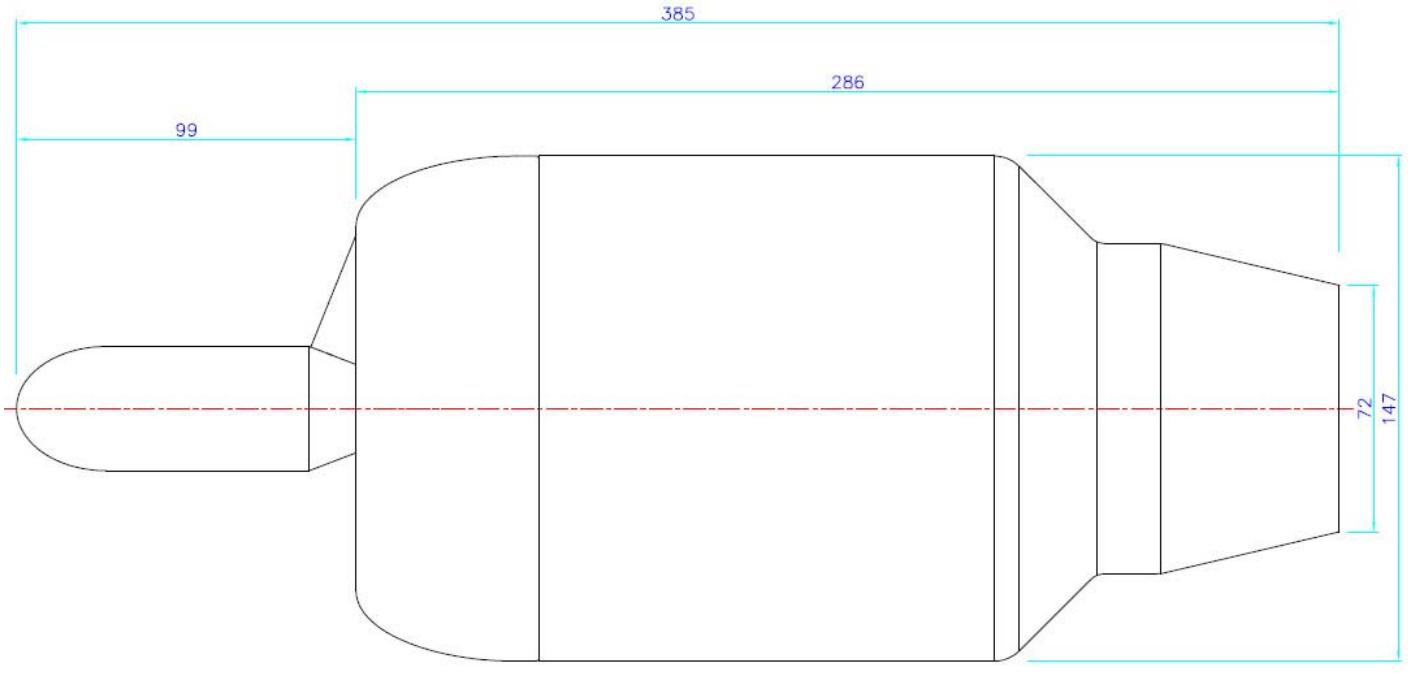
400-N UAV gas-turbine.

Diameter	147	mm	5.8	inch
Length air-start	268	mm	10.5	inch
Length electric-start	385	mm	15.1	inch
Turbine weight air-start	2975	gram	6.6	inch
Turbine weight electric-start	3350	gram	7.4	inch
System airborne weight air-start *	4200	gram	9.3	Lbs
System airborne weight electric-start *	4575	gram	10	Lbs
Thrust @ max. rpm	392	N	88.2	Lbf
Thrust @ min. rpm	13	N	2.9	Lbf
Maximum RPM	95,000		95.000	
Idle RPM	30,000		30.000	
Pressure ratio @ max. rpm	3,8 :1		3.8 : 1	
Mass flow @ max. rpm	660	gr/sec.	1.46	Lb/sec
Normal EGT	700	C	1290	F
Maximum EGT	750	C	1382	F
Fuel consumption @ max. rpm	1120	gr/min.	39,5	oz/min
Fuel	JP-4/petroleum/Jet A1			
Oil	4,5% aeroshell 500 mixed with fuel.			

* The system airborne weight includes engine, ECU, pump, battery, thermo sensor and mounting straps.

All data at STP **S.T.P**. : Standard Temp. & Pressure
Temperature : 15 Degrees Celsius / 59 Degrees Fahrenheit
Pressure : 1013 Mbar / 29.91 in

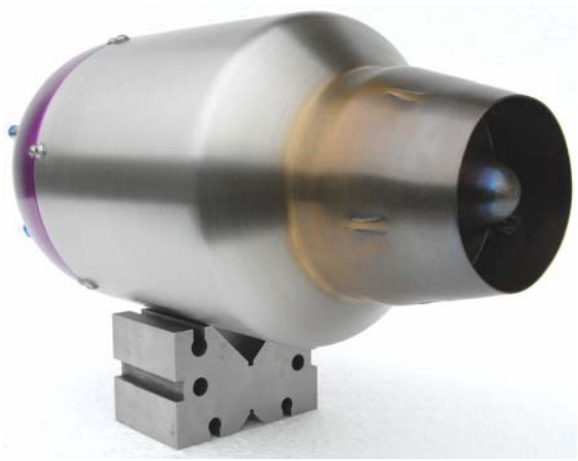


Description of the 400-N UAV Electric start gas turbine

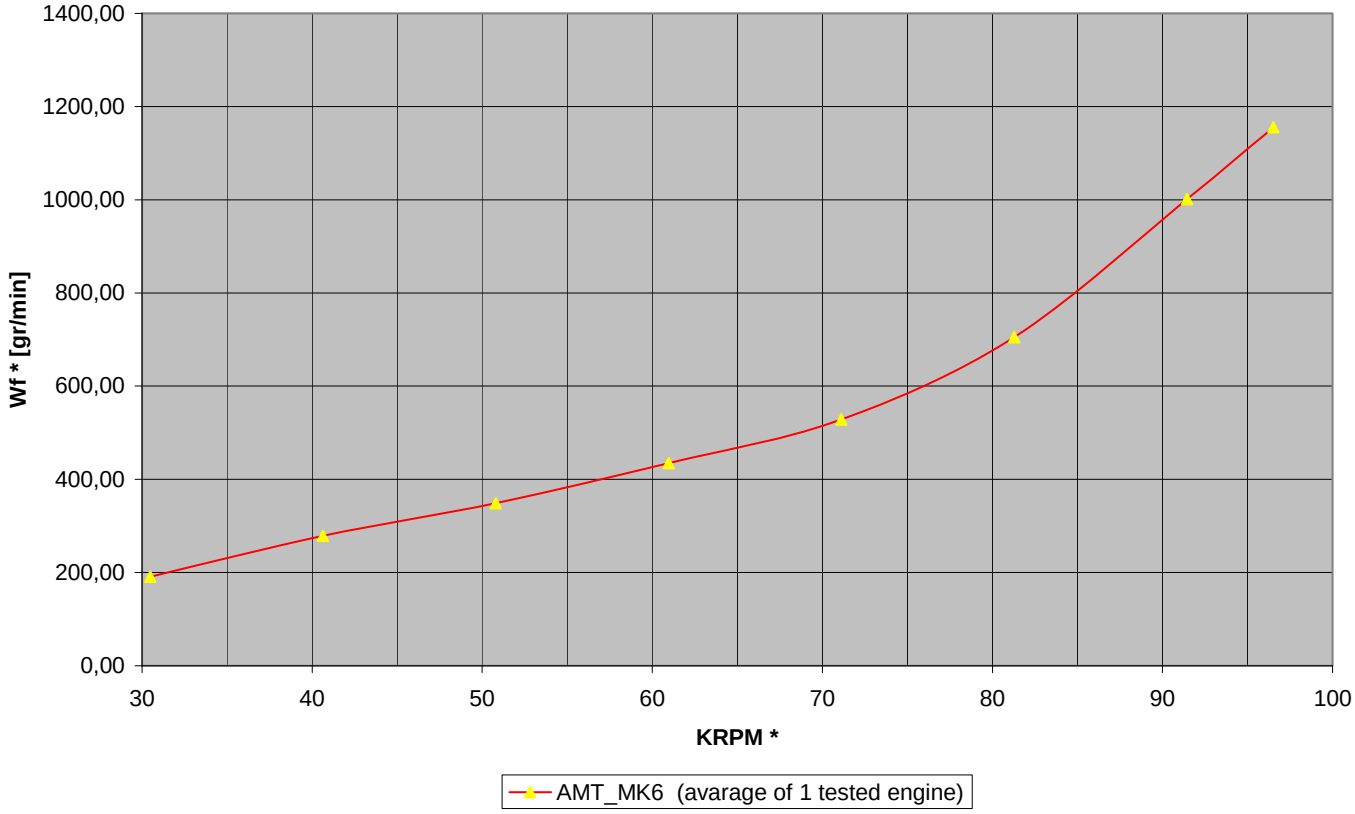
The Titan has been constructed from a single radial compressor and an axial flow turbine stage. The UAV turbine owes much of its excellent performance and superb power/weight ratio to a new design diffuser. This revolutionary type of diffuser also allows the relative small engine diameter.

The time required for the Titan to spool up and down is also positively influenced by the low mass of the axial turbine wheel, taking less than 4 seconds from min. to max. rpm and only 3 seconds from max. rpm to min. rpm.
The combustion chamber is of the annular type, which is fitted with a unique "low pressure" fuel system. Both the front and the rear hybrid bearings are lubricated and cooled by the fuel system, and therefore the motor requires no separate lubrication system or oil tank.

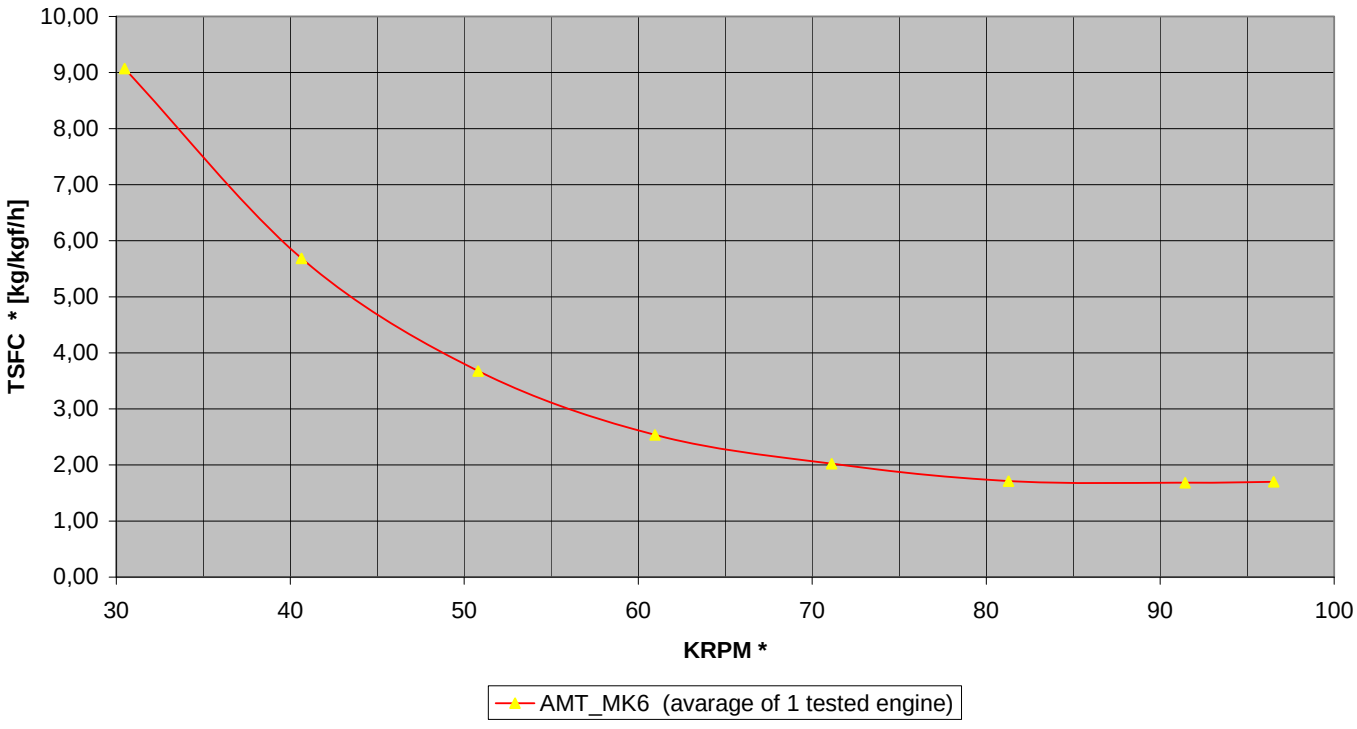
The turbine is protected from misuse and accidental damage by means of a microprocessor based controller (ECU) which regulates operation of the engine within pre programmed software limits. The ECU is fully automatic and needs no adjustment by the operator.



Fuel Flow VS. RPM, corrected to STP
Titan UAV



SFC VS. RPM, corrected to STP
MK - 6



Thrust VS. RPM, corrected to STP
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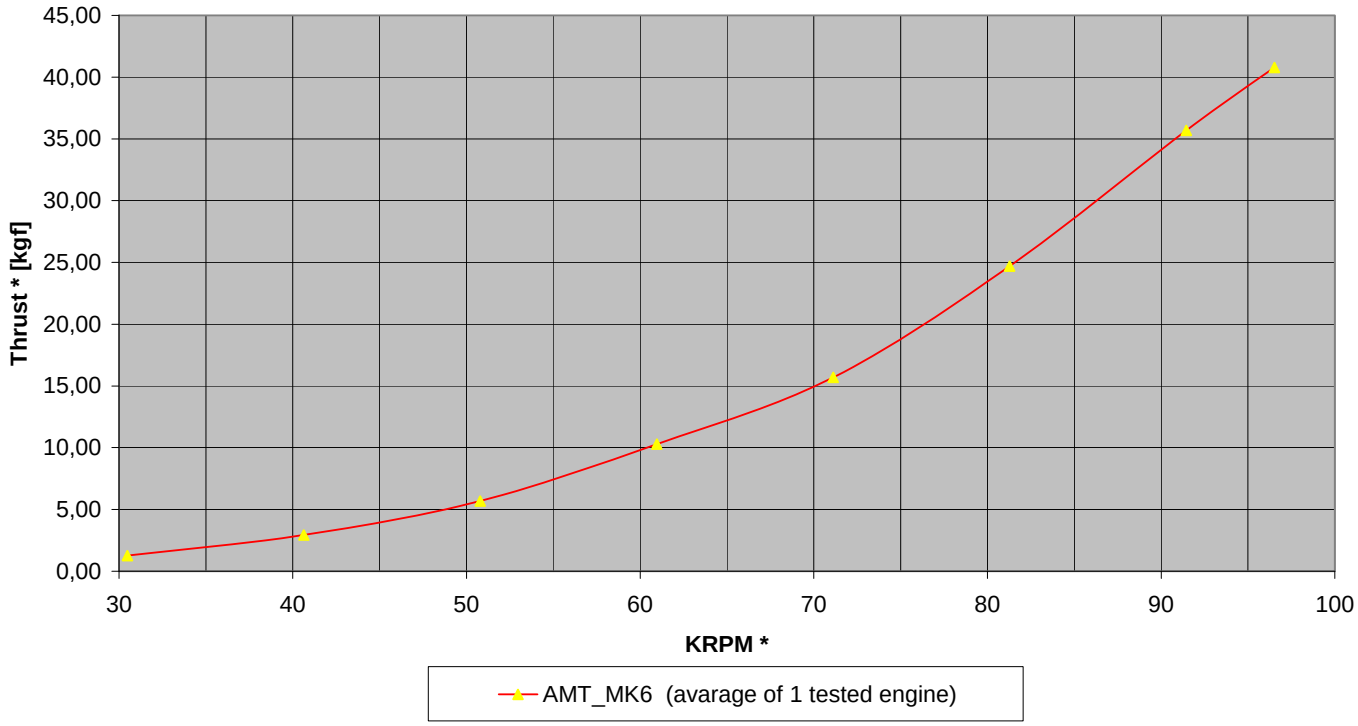

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EGT versus RPM