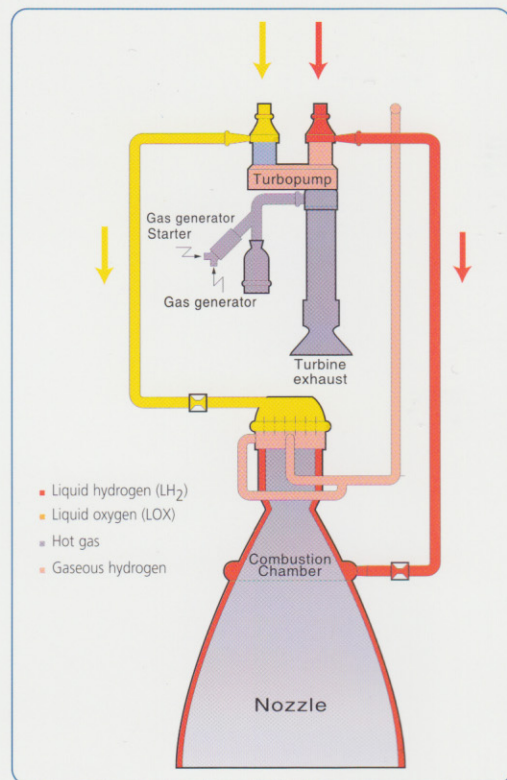
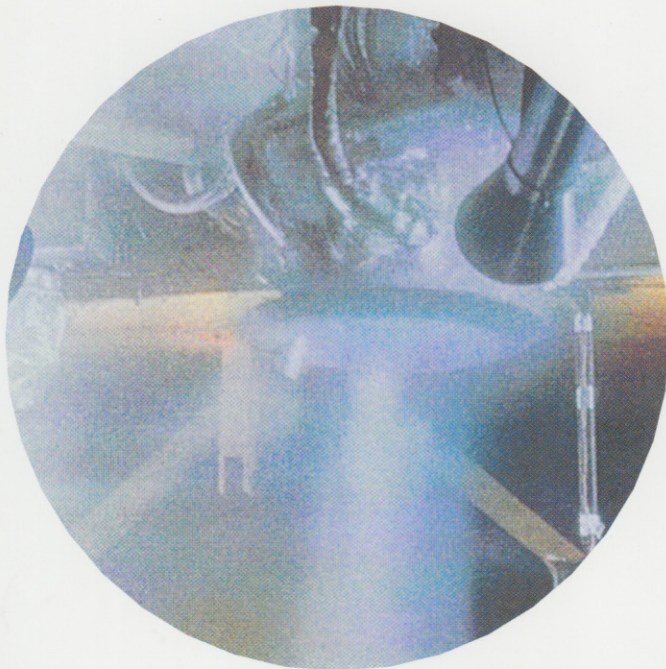


# HM7B





The HM7B engine powers the cryogenic upper stage of the Ariane 5 ECA launcher. It was used on this launcher for the first time during the qualification flight on February 12, 2005.

The HM7 was first qualified back in 1979 for the maiden flight of the Ariane 1 launcher. Since then it has undergone several enhancements to increase thrust, specific impulse, burn time and reliability. The liquid oxygen and hydrogen propellants are supplied by a turbopump whose high-speed shaft (for the hydrogen pump) operates at more than 60,000 rpm. The oxygen shaft is driven by a two-stage reduction gear.

Snecma will soon reach a total of 200 HM7 engines produced, including development, qualification and flight models.

## Technical specifications

• Cycle	Gas generator
• Vacuum thrust	64.8 kN
• Specific impulse	446 s
• Combustion pressure	37 bar
• Area ratio	83.1
• Propellants	LOX-LH2
• Propellant flow rate	14.8 kg/s
• Mixture ratio	5.0
• Turbine speed	60,800 rpm
• Turbine power	400 kW
• Height	2.01 m
• Nozzle exit diameter	0.99 m
• Total weight	165 kg



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