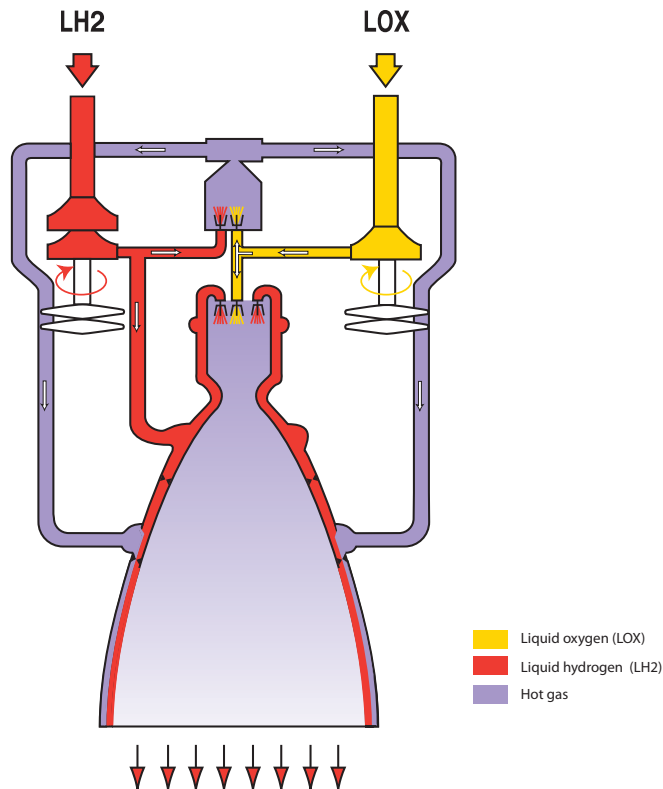




SPACE PROPULSION

VULCAIN[®] 2

VULCAIN[®]2



The Vulcain[®]2 cryogenic rocket engine, developing 1,340 kN tons of thrust (about 300,000 lb), powers the cryogenic main stage of the Ariane 5 ECA and Ariane 5 ES launchers. Based on the original Vulcain[®] engine, it increases thrust by 20%.

Snecma is the prime contractor for this engine, leading a team of European manufacturers including Techspace Aero (SAFRAN group), Astrium GmbH, Avio and Volvo Aero Corporation.

The Vulcain engine started flight operations in 1998. As of June 1, 2011, Snecma had produced a total of 95 Vulcain engines, including development and flight models, and they had logged 44 successful launches in a row.

ENGINE FEATURES

Type	Cycle à générateur de gaz
Vacuum thrust (kN)	1,340
Specific impulse (s)	431
Combustion pressure (bar)	115
Propellants	LOX-LH2
Propellant flowrate (kg/s)	320
Mixture ratio	6.10
Turbopump speed (rpm)	LOX: 12,300 - LH2: 35,800
Turbine power (MW)	LOX: 5 - LH2: 14
Height (m)	3.45
Nozzle exit diameter (m)	2.10
Engine weight (kg)	2,100

