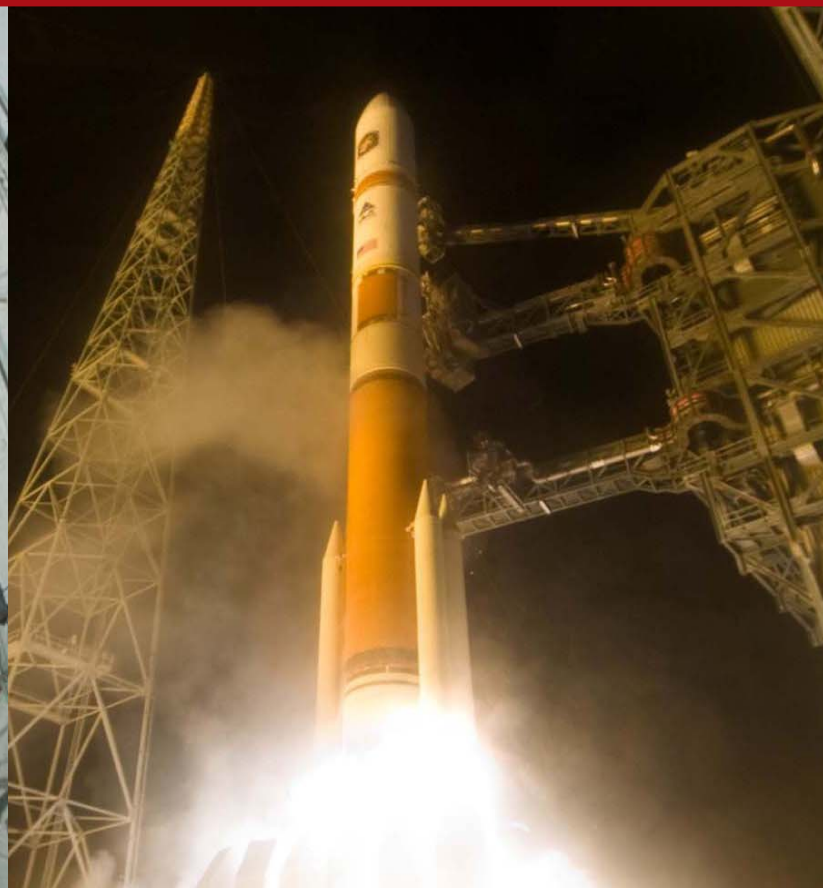


GEM-60 Solid Rocket Strap-on Booster



ATK's GEM-60 Motor is a Commercially Provided, Reliable, Low-Cost Propulsion System

Overview

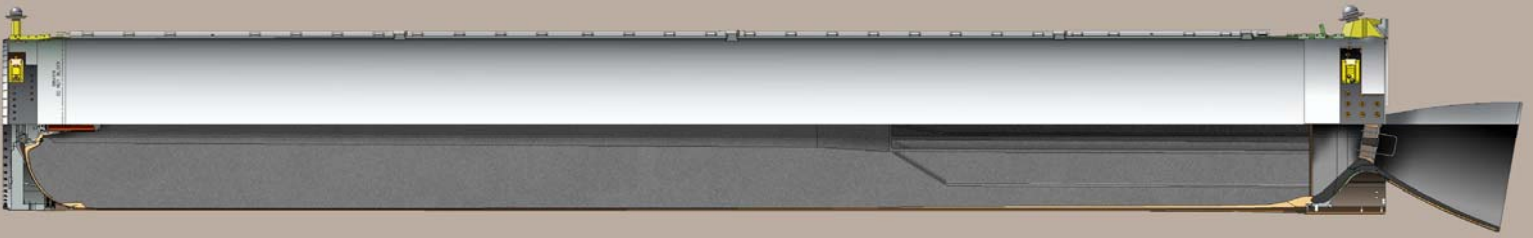
ATK Aerospace Systems produces Graphite Epoxy Motor 60-inch diameter (GEM-60) solid rocket strap-on motors used on United Launch Alliance's Delta IV launch vehicle. The booster system is flown for the first 80 seconds of flight in either two- or four-motor configurations, providing 560,000 or 1.2 million pounds of additional thrust, respectively.

Features

The GEM-60 measures 60 inches in diameter, is 53 feet in length and is cast in single a monolithic pour. It features a composite case, nose cone and aeroskirt. In the two-booster system configuration, both motors utilize vectorable nozzles, while the four-booster system operates with one fixed and one vectorable nozzle per side.

Background

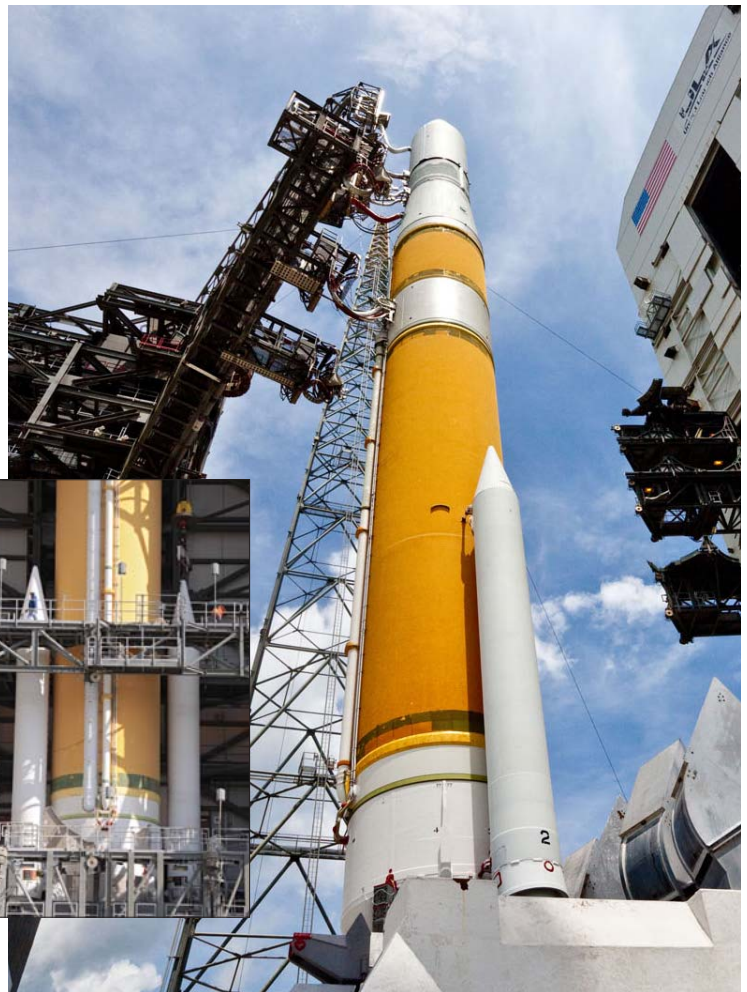
The GEM-60 motor is a strap-on booster developed by ATK in 2000 to increase the payload-to-orbit capability of the Delta IV M+ launch vehicles. The first two-motor configuration of the GEM-60 boosted the inaugural flight of the Delta IV launch vehicle family in November 2002, and the first four-motor configuration flew in 2009.



Twenty GEM-60 Motors Have Successfully Boosted ULA's Delta IV M+ Launch Vehicles Since 2002

Motor Specifications

Diameter:	_____ 60 in
Length:	_____ 53 ft
Propellant Weight:	___ 65,472 lb
Max Thrust:	_____ 281,000 lbf
Isp:	_____ 17.95M lbf-sec
Nozzle:	_____ Fixed and vectorable configurations



Pad and launch photos courtesy of ULA
Stacking photos courtesy of NASA

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