

Aerojet Rocketdyne

RS-68A

PROPULSION SYSTEM



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The world's most powerful hydrogen-fueled rocket engine

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Generating 705,000 pounds of thrust at sea level, the Aerojet Rocketdyne RS-68A is the world's most powerful hydrogen-fueled rocket engine.

The engine provides main propulsion on United Launch Alliance's Delta IV rocket, which is used primarily by the U.S. Department of Defense. The Delta IV Heavy, featuring three vehicle cores in a side-by-side configuration, is capable of launching the Defense Department's heaviest payloads.

The original variant of the engine, the RS-68, was developed with private company funds. The RS-68A represents an improvement over the RS-68 and provides 42,000 pounds of additional thrust. The upgraded RS-68A completed its first test firing in September 2008, was certified in April 2011 and made its inaugural flight in June 2012.



Product Facts

Program Milestones

November 2002	First flight - RS-68
September 2008	First test firing - RS-68A
November 2010	RS-68A certification testing completed
April 2011	RS-68A design certification completed
June 2012	First flight - RS-68A

Features

- World's largest and highest thrust hydrogen fueled engine
- Commercially-developed
- Produces more than 17 million horsepower

Specifications

Engine	Full Power	Engine	Minimum Power
Thrust (Vacuum):	800K lbf		412K lbf
Thrust (Sea Level):	705K lbf		318K lbf
Chamber Pressure:	1580 psia		820 psia
Engine Mixture Ratio:	5.97		5.99
Isp, Vacuum:	411 sec		411 sec
Isp, Sea Level:	362 sec		317 sec
Height:		17.1 ft	
Weight:		14,740 lbs	
Diameter:		8 ft	
Expansion Ratio:		21.5	

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