

SSME

Space Shuttle Main Engine



Pratt & Whitney Rocketdyne



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Overview:

The Space Shuttle Main Engine (SSME) is the world's most reliable and highly tested large rocket engine ever built. The SSMEs have achieved 100% flight success, and a demonstrated reliability of 0.9995. The SSME is a reusable, staged-combustion cycle engine utilizing liquid hydrogen fuel to achieve high performance never previously attained in a production rocket engine. The SSME is the only operational, reusable liquid booster engine designed for human space flight.

The first flight of the Block II SSME occurred in July 2001.

Performance

Block II Space Shuttle Main Engine (full power level)

Maximum Thrust: (109% Power Level)	At Sea Level:	418,000 lb
	In Vacuum:	512,300 lb
Throttle Range:	67% – 109%	
Pressures:	Hydrogen Pump Discharge:	6,276 psia
	Oxygen Pump Discharge:	7,268 psia
	Chamber Pressure:	2,994 psia
Specific Impulse: (In Vacuum)	452.3 sec	
Power: High Pressure Pumps	Hydrogen:	71,140 hp
	Oxygen:	23,260 hp
Area Ratio:	69:1	
Weight:	7,774 lb	
Mixture Ratio: (O/F)	6.03:1	
Dimensions:	168 in. long 96 in. wide	
Propellants:	Fuel:	Liquid Hydrogen
	Oxidizer:	Liquid Oxygen



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