

RL10



Pratt & Whitney Rocketdyne



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RL10

Propulsion System

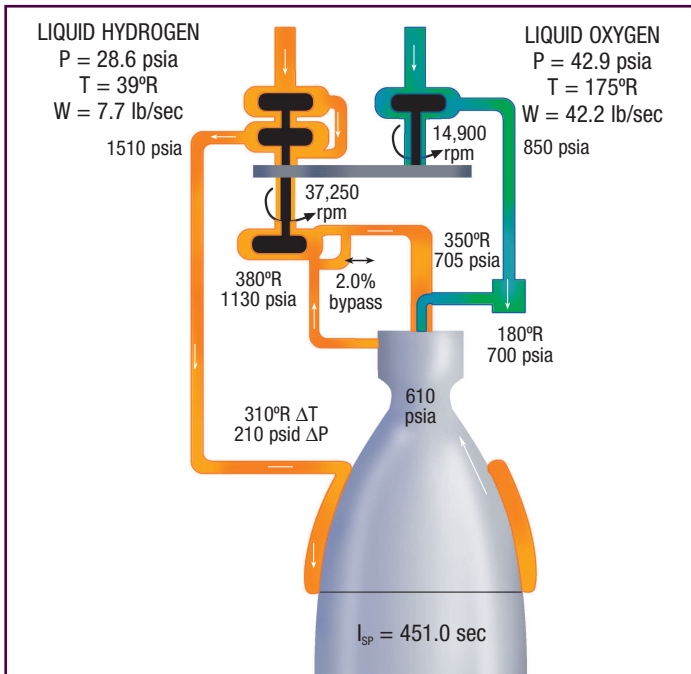


As the most reliable, safe and high-performing upper-stage engine in the world, the remarkable RL10 has accumulated one of the most impressive lists of accomplishments in the history of space propulsion with more than 2 million seconds of engine run time.

Created in 1959 after Pratt & Whitney Rocketdyne harnessed high-energy liquid hydrogen as fuel for aerospace propulsion, the RL10 has helped place numerous military, government and commercial satellites into orbit, in addition to powering space probe missions to nearly every planet in our solar system. Some of its notable interplanetary missions include the Surveyor lunar lander, Viking Mars lander and the Voyager outer planets fly-by, while its heritage includes supporting MILSTAR, EUTELSAT, TDRS ECHOSTAR, INTELSAT, GALAXY, DSCSIII, and JCSAT satellites.

Today, the RL10 continues its legacy as the industry workhorse as it powers the upper stage for vehicles in the Lockheed Martin Atlas rocket family. In August 2002, the engine set another milestone when it successfully propelled the payload for the inaugural Lockheed Martin Atlas V that helped set the foundation for the U.S. Air Force's Evolved Expendable Launch Vehicle (EELV) program.

Several RL10 models have supported various launch vehicles depending on the payload requirements and configuration for the mission. Current engine models and their supported vehicles are as follows: RL10A-4-2 (Atlas V) and RL10A-4-1 (Atlas, IIAS and IIIB). In its history, the RL10 has supported Atlas I and II, Saturn and Titan launch vehicles. It also powered the experimental Delta Clipper.



Characteristics

	RL10A-4-1/RL10A-4-2
Thrust:	22,300 lb
Weight:	370 lb
Fuel/oxidizer:	Liquid hydrogen/Liquid oxygen
Mixture ratio:	5.5:1
Specific impulse:	451.0 sec

PRATT & WHITNEY ROCKETDYNE, a United Technologies company with sites throughout the U.S., is dedicated to providing advanced, reliable, and cost-effective propulsion systems for spacecrafts and missile propulsion systems and service.



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