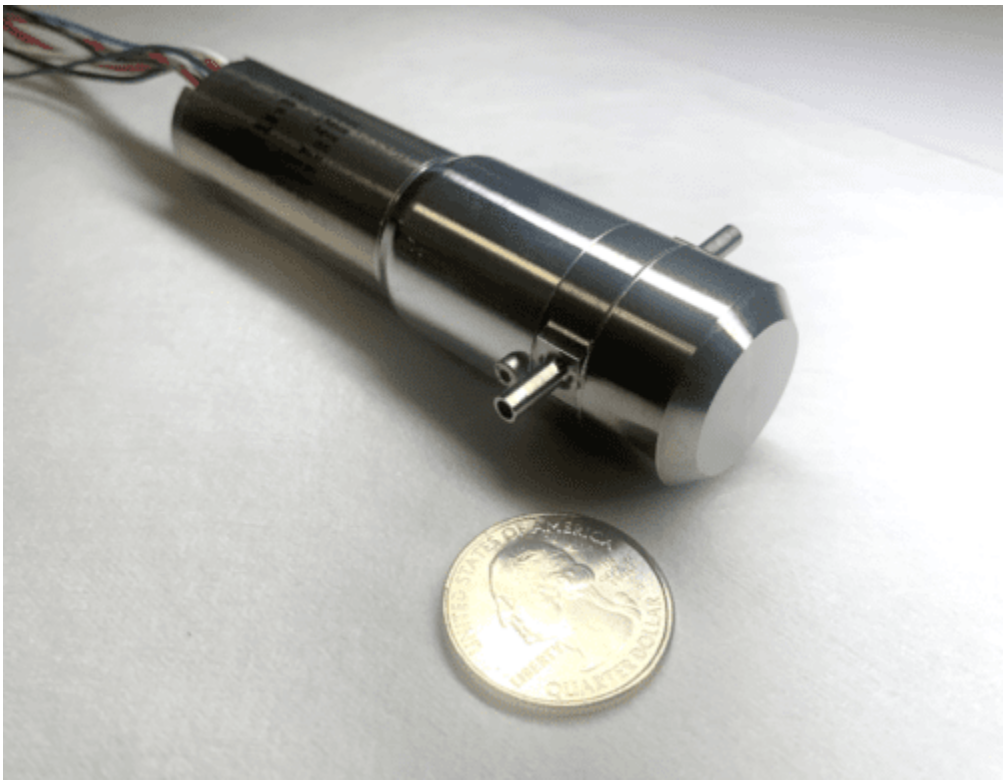
Flight Works Pump Powers the NASA CAPSTONE Propulsion Module Towards the Moon



IRVINE, CA (Flight Works, Inc. PR) — On June 28, 2022, NASA launched its Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE). This mission aims to demonstrate the feasibility of using low energy Ballistic Lunar Trajectories (BLT) to reach and operate in Near Rectilinear Halo Orbits (NRHO) around the moon. It plays a key role in the Artemis program by helping reduce risks for future spacecraft and NASA's planned Gateway Lunar outpost, a space station that will orbit around the moon to provide astronauts with access to the lunar surface.

After introducing the concept of pump-fed propulsion systems for CubeSats and MicroSats more than a decade ago, Flight Works is proud to see its pump technology playing a key role in enabling the CAPSTONE spacecraft to perform its mission. The small electric pump, supplied to Stellar Exploration of San Luis Obispo, CA who developed the propulsion system, takes the hydrazine stored at low pressure in the tank and feeds it at high pressure to the small thrusters. This approach simplifies the propulsion system, and allows using conformal, low weight tanks. For reliability and range safety compliance, the pump head is hermetically sealed and driven by the electric motor via a magnetic coupling. "We selected the Flight Works pump as the only viable solution on the market available for this application. This propellant pump meets all our

requirements – propellant compatibility, safety, great combination of efficiency and performance, and high reliability", said Tomas Svitek, President of Stellar Exploration, Inc. the developers of the CAPSTONE propulsion system. The technology was first demonstrated in space in 2021 in similar propulsion system used in the EG-3 CubeSat. To date, the CAPSTONE pump has been used successfully in several Trajectory Correction Maneuvers (TCMs).

"We are honored to be able to provide our pump solution to Stellar Exploration and of the trust placed in our hardware" says Eric Besnard, CEO of Flight Works Inc; "it has allowed the technology to not only be used in space, but also play a critical role in this important mission to the moon."

About Flight Works, Inc.
Flight Works specialized in the development, production and qualification of tailor-made pump-fed propulsion and cooling solutions for space applications. Since 2002, Flight Works has also been serving a multitude of industries for numerous applications including UAV and aviation fuel systems, robotics, medical devices and much more. Maximizing in-house design, manufacturing and test allows Flight Works to meet a wide variety of customer requirements in short timelines.