

Gleaming the CubeSat

By Chris Cardinal



[Howe Industries](#) and its subsidiary [Thermasat](#) are both innovators in the field of space exploration, having developed and patented numerous breakthrough technologies in the field. Their latest project is a unique water-based propulsion system for small research spacecraft known as [CubeSats](#).

It should come as no surprise a company that puts complex systems in space has a demand for exacting precision, as well as the need to cut lightweight and sometimes exotic materials. With the upcoming release of their first commercial space project, there comes a heavy R&D schedule that must follow stringent NASA guidelines.



The [WAZER](#) small waterjet was purchased specifically for this project due to its ability to precisely cut any material and turnaround cut parts quickly. Jack Miller, lead engineer for the Thermasat research and development program, emphasized the numerous design cycles the project requires, “We often iterate multiple times a day on the same part.”, and “the pace for testing and production is greatly accelerated.” A typical day can have the WAZER cutting anything from aluminum parts for the satellite propulsion system, intricate profiles for test stands in carbon fiber, various metals such as 316 stainless and copper, or even ceramics and borosilicate glass for an optical system. The WAZER’s ability to precisely cut any material without expensive tooling is considered by many one of its strongest assets.



“The WAZER is crucial to our success in rapid prototyping space components in-house”

Jack added, “The WAZER is crucial to our success in rapid prototyping space components in-house”, and “it really took this project to the next level.” Without waiting for outside vendors to provide a costly and time-consuming solution, the engineering team at Thermasat has been able to design, cut, and iterate much faster and more efficiently than would have been otherwise possible. In addition, given the nature of their projects, there is no need to worry about losing control over their IP design data because the work is all kept inside the company.