SteamJet

The New Age of Steam in Space

The Steam Thruster One

Water-Powered Propulsion Technologies

For Small Satellites and CubeSats

The Steam Thruster One is a safe, high-performance, electrothermal propulsion system specifically designed for CubeSats and Small Satellites.

Thanks to its high Specific Impulse, high Thrust and low Power consumption, the Steam Thruster One represents the best choice for most Low Earth Orbit missions.

Flight Heritage

6+ Steam Thruster One propulsion systems successfully operated in space (100% success rate)

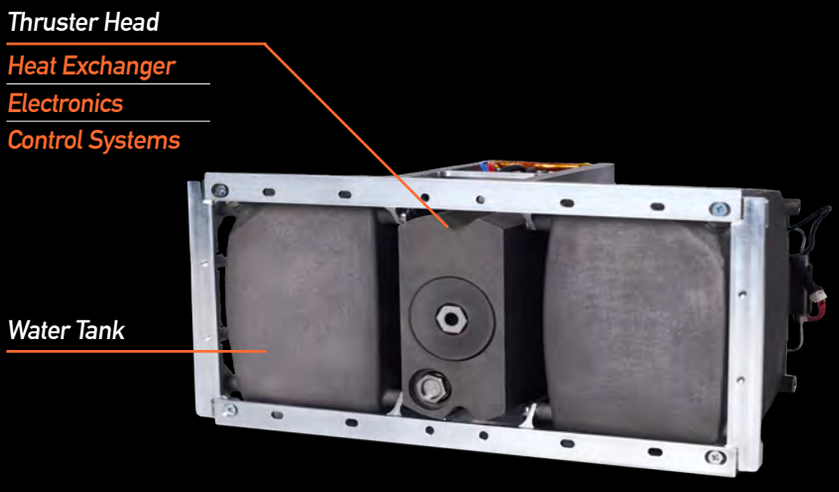
Optimization & Manoeuvres

Collision Avoidance

Constellation Management

Life Extension

De-Orbit



- High Thrust
  - 50x More Than Electric Propulsion
- Low Power Consumption
- High Total Impulse
- Customizable Water Tanks
- Safe
  - Low Pressure Water as The Main Propellant
- Easy to Integrate and Operate
- No RF interference
- ITAR-Free, No Import Hurdles

For more Info and Orders

team@steamjet.space

https://steamjet.space

Alpha Works, Alpha Building, Suffolk St Queensway, Birmingham, B1 1TT

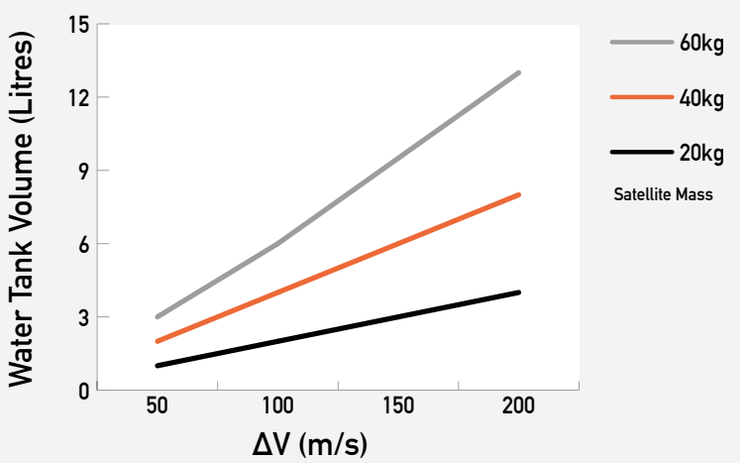
Specifications	Value	2U Unit
Nominal Thrust (mN)	5-20*	5-20*
Specific Impulse (s)	172	172
Total Impulse (Ns)	1000 per 1U Water Tank	1200
Minimum Impulse Bit [mNs]	10	10
Power consumption Thrusting / Idle [W]	19.9* / 0.12	19.9* / 0.12
Wet Mass [g]	Mission dependant	1700
Propellant Mass [g]	Mission dependant	700
Propellant	Water**	Water**
Voltage [VDC]	17 - 33	17 - 33
Communication Protocol	RS 422, TTL UART	RS 422, TTL UART
Dimensions [mm]	Mission dependant	208 x 102 x 121

*A higher thrust is achievable using more than 20W

**Water-Alcohol mixture possible to reduce the freezing point up to -30 °C

S J
S S

ΔV vs Water Tank Volume



1 Litre = 1 CubeSat Unit (or 1 dm^3)

Water Tank Volume required for a ΔV budget between 50 m/s and 200 m/s. Typical use cases included within this budget are constellation deployment and management, station keeping, collision avoidance and de-orbit.

Space qualified according to ESA ECSS-E-ST-10-03C and NASA GSFC-STD-7000A

The Steam Thruster One can operate at more than 20 mN of thrust if more power is provided.

Customizable Water Tanks



Size and shape of the water tanks can be customised for an easier integration within the satellite

Please get in touch to discuss your mission requirements.