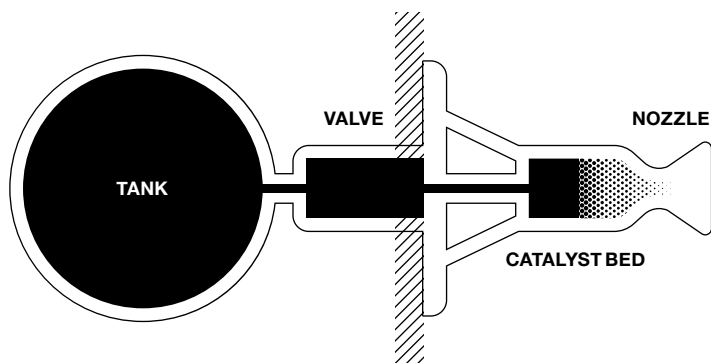




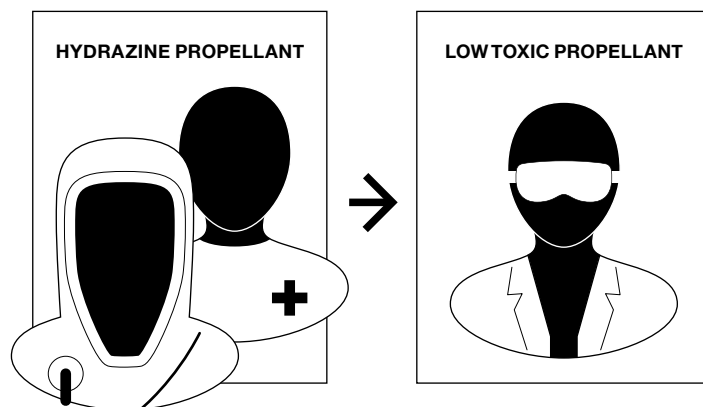
## HYDROGEN PEROXIDE SMALL THRUSTER

H<sub>2</sub>O<sub>2</sub> Monopropellant thruster designed for Cubesats to 100kg satellites.  
Our products support the space industry by providing easy,  
safe and cost-effective solutions.



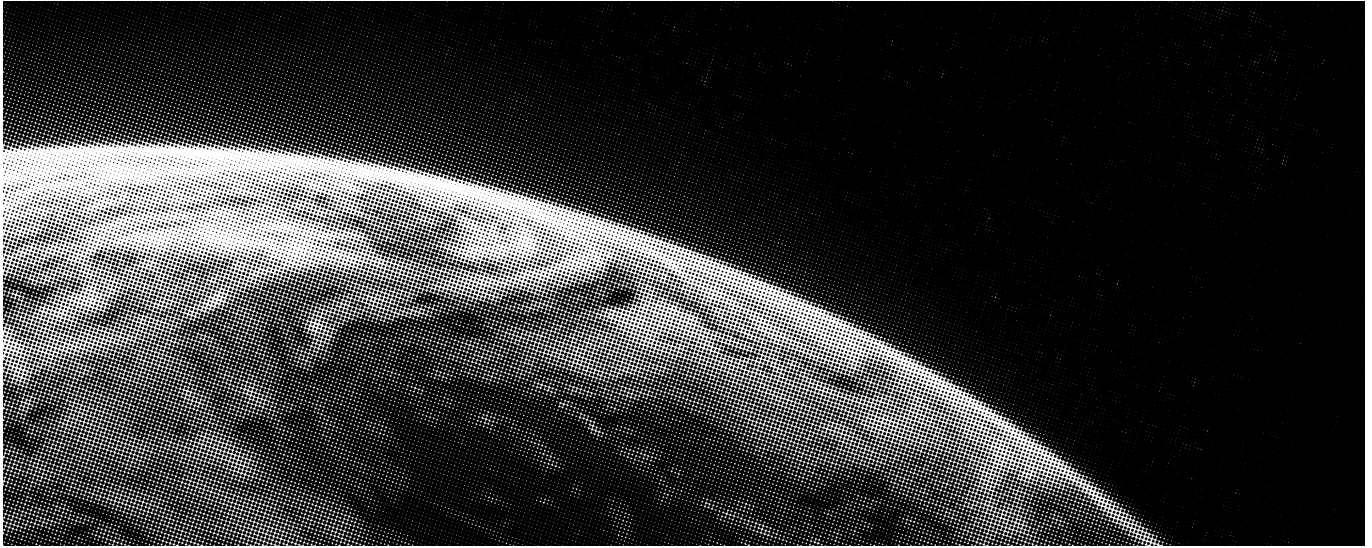
### MONOPROPELLANT THRUSTER

Thrusters are used for attitude control and orbit change. There are two types of chemical thrusters. One is monopropellant thruster which provides thrust by generating gas through decomposition of propellant by catalyst. The other type is bipropellant thruster which can achieve high thrust. However, the system is complicated because two supply lines are necessary. Monopropellant thrusters are high in reliability because the system is simple with only one supply line.

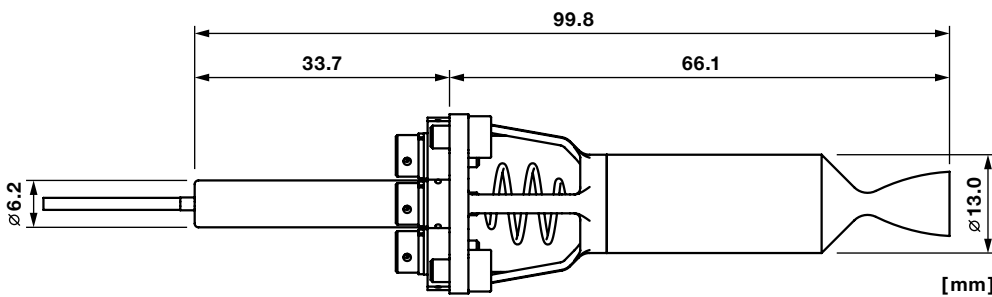


### SIMPLER TO HANDLE

Compared to hydrazine, handling procedures for low toxic propellants are much simpler, with only normal chemical protective clothing required, making prelaunch fueling both faster and less expensive. Traditional hydrazine propellant is highly toxic and easy to evaporate requiring handling by qualified personnel using air supplied SCAPE [Self Contained Atmospheric Protective Ensemble] suits as well as standby medical personnel.



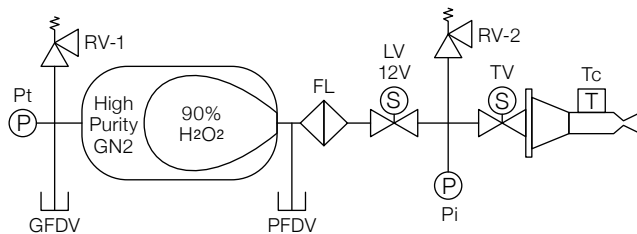
## FEATURES



Propellant	Hydrogen Peroxide [90%-]
Thrust	0.2N
ISP	150-155sec
Supply Pressure	0.9MPa
Valve Voltage	Holding 3V-0.4W Opening 12V-6.5W
Catalyst Heating Power	0W *Cold Start
Weight	Thruster 22.7g Valve 8.0g

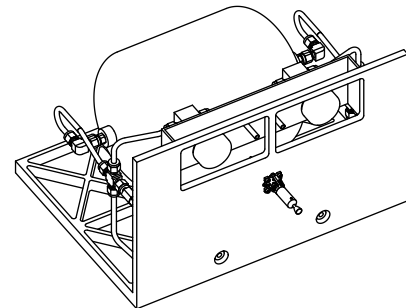
## SUPPLY SYSTEM

Piping System Diagram



\*An example of single tank-thruster usage currently under development.

Supply System Image



### Technological Readiness Level

TRL4  
[Vacuum combustion test completion]

※As of May, 2021

### Customisation

Thrust can be modified and the number of valves, tanks and thrusters can be designed to the needs of the customer.



Developed under grant from the New Energy and Industrial Technology Development Organization [NEDO], a national research and development corporation.



www.takasago-fluidics.com



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