

B1 THRUSTER

The B1 thruster assembly includes:

- Additively manufactured thruster body, Inconel 718
- Valves redundancy
- Thermocouple and pressure sensor
- Control electronics
- Standard data and power interfaces

The B1 is operable under ambient conditions to enable fast turnaround ground testing.

Advantages:

Flight heritage

21 in space since 2020.
Proven on 9 different spacecrafts.
Compatible with CubeSats and SmallSats.

Green propellants

Nitrous oxide (N₂O) and Propylene (C₃H₆).
Self-pressurizing: no pumps or pressurants.
REACH compliant.
High performance for a low cost.

Cold gas capable

Unlimited operations.
Allows for tiny impulse bits from 0.59 mN.s.
Perfect for rendezvous and docking.

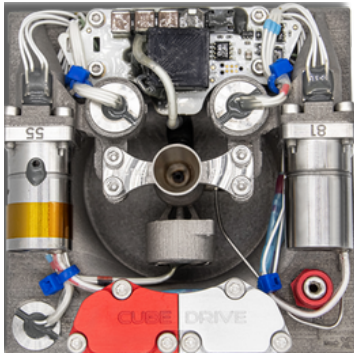
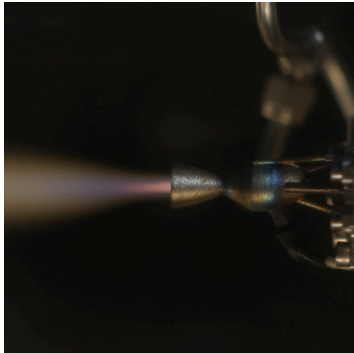
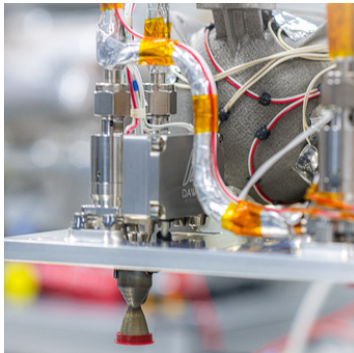
Modular and scalable

From 1 to 16+ thrusters per system.
Combine with B20 thrusters.
Ideal for 6-DOF systems.

Thruster Data Sheet



Physical	
Thruster dimensions (incl. keep-out zones)	108 x 79 x 40 mm (4.25 x 3.11 x 1.58 in)
Dry mass	260 g (0.57 lbs)
Valves	Normally-closed solenoid Two per thruster
Environmental	
Operational temperature	-5°C to 30°C (23°F to 86°F)
Survival temperature	-30°C to 40°C (-22°F to 104°F)
Performance	
Thrust range	0.49 to 1.35 N (0.11 to 0.30 lbf)
Specific impulse	≥ 248 s
Minimum impulse bit	Bi-prop: 74 mN.s (0.016 lbf.s) Cold-gas: 0.59 mN.s (1.3e-4 lbf.s)
Ignition	Spark-based igniter
Pulse frequency	4 Hz
Restarts	18,000+ per thruster
Control	Operable together or independently. Select your desired quantity. Pair with B20 thrusters.
Firing modes	Bi-prop or cold-gas. Switch at will. Achieved by not engaging the spark-igniter.
Cold-start capable	Yes. Highly repeatable.
Interfaces	
Mounting	4x 3.2 mm holes
Valve power	Hit: 17.5 W for 15 ms (per valve) Hold: 0.75 W (per valve)
Igniter	6.4 W max for 50 ms



Minimum order: 10 units
Please note that Dawn Aerospace will only supply standalone thrusters with a minimum order of 10 units.