



## **22 Newton Thruster with Fully Cooled Nozzle and Chamber**

Introducing the 22N Bi-Propellant Rocket Engine. This thruster has been in development since 1995 and has been operated for up to 8 minutes per unit and over 100 minutes for a series.



Nozzle shown is for sea level operation; a 60:1 bell is for operation in Space

The 22N rocket engine is 38 millimeters in diameter and 120 millimeters in length (approximately 1.5" OD x 5.0"). It operates on a specially formulated fuel/coolant and liquid Nitrous Oxide as oxidizer. Both propellants are pre-pressurized eliminating the need for a pressurizing system. Sensors detect initial temperature, ignition, over-temperature and cooling system status.



Prototype engine operating at full thrust in a static test

Test shown above was performed at sea level where the thrust is approximately fifteen Newtons in force. The mach diamonds in the exhaust stream are clearly visible.

The engine must be operated with a programmed start-up and shut-down electronic interface and is therefore only supplied in systems. A system is comprised of one 22 N rocket engine, high pressure tanks for fuel and oxidizer with integrated pressurization, valves, plumbing, ignition subsystem, sensors, and control unit.

This engine can readily be assembled in systems providing up to 7000 Newton-Seconds total impulse. The total impulse accuracy is approximately  $\pm 1$  Newton for an average 20 seconds burn.

For additional information on this system and other Aerocon Systems propulsion devices, please contact us.

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