Space Propulsion Solutions
Who We Are

Moog’s Space and Defense Group is the premier motion and fluid control solutions provider for satellites, human-rated space vehicles, launch vehicles, missiles, military ground vehicles, naval vessels, and security and surveillance systems.

In our Space Sector, we supply critical components, subsystems and systems for access to and operation in space, including:

- Antenna and Solar Array Positioners
- Avionics
- Electronic Assemblies for Satellites
- Electronic Controllers
- Flight Control Actuators
- Fluid Control Systems
- Payload Electronics
- Propulsion Components, Subsystems and Systems
- Reaction Wheels
- Thrust Vector Control
- Vibration Isolation

In an effort to expand our offerings and better serve our customers, Moog has added eight additional sites since 2011; including four in the United States and four in Europe. We have a worldwide network of engineering, manufacturing and sales offices to provide complete lifecycle support for every stage of your mission.

What We Do in Propulsion

Moog offers components to complete propulsion system solutions to meet customers’ specific needs. From propellant tanks to valves, thrusters, thrust vector control and beyond, Moog delivers flight proven propulsion hardware for every stage of a mission.

Working to accomplish mission goals, Moog supports customers from the early design phases to engineering all the way to manufacturing and test. With the use of our highly skilled team worldwide, Moog is able to provide products and systems to a wide variety of propulsion needs, including:

- Chemical – full monopropellant and bipropellant systems
- Cold Gas – cold gas thrusters and systems
- Cryogenic – cryogenic valves and pressurization controls
- Electric – thruster gimbals, xenon subsystems and components
- Non-Toxic – advancements in alternative chemical and cryogenic propulsion systems

We are committed to providing tomorrow’s innovative propulsion technologies, supported by our unmatched and proven heritage, with facilities around the world.
Launch Vehicle Propulsion

ROLL AND REACTION CONTROL THRUSTERS:
Monopropellant thruster suited for attitude control.

PROPELLANT TANKS:
Fabricated from low-cost commercially available aluminum alloys, this design and manufacturing approach has been scaled to tank diameters up to 79 cm/31 in.

PROPULSION ELECTRONIC CONTROLLERS:
For fault tolerant systems in extreme launch and space environments.

STRUCTURES AND VIBRATION ISOLATION:
Reduces vibration and shock loads with patented UniFlex, OmniFlex and ShockRing systems.

THRUST VECTOR CONTROL:
Electromechanical, electrohydraulic and electrohydraulic steering control systems.

PROPELLANT COMPONENTS AND SUBSYSTEMS:
Moog provides system solutions for RCS, main propulsion systems and generic controls to support the future of space access.

CRYOGENIC VALVES:
Fuel and oxygen control for booster and upper stage engines.

ROLL AND REACTION CONTROL THRUSTERS:
Monopropellant thruster suited for attitude control.

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Spacecraft Propulsion

**Engines and Engine Control Valves:**
Spacecraft apogee and attitude control engines for flight maneuvers and station keeping.

**Fluid Systems and Components:**
Propellant control subsystems for bipropellant and electrical propulsion systems.

**Sensing and Feedback:**
Consists of a pressure-sensing element and a dedicated set of electronics, integrated into one compact design.

**Propulsion Systems:**
Complete tank to thruster solutions for next generation spacecraft.

**Electric Propulsion:**
Heritage regulation and control components. Advanced research and development for tomorrow’s electric propulsion technology.

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