SPACE
REVOLUTIONIZING
THE WAY TO SPACE
Moog designs and manufactures components and systems to survive the harsh environments of space travel. An industry leader in space avionics, actuation and mechanisms, propulsion, power, structures, and shock and vibration control, Moog has been committed to the space industry for over 60 years. For future space missions, Moog is investing significant resources into propulsion test facilities, metal additive manufacturing, rad-hardened avionics, and innovative orbital maneuvering vehicles.

DID YOU KNOW THAT MOOG HAS TRAVELED TO EVERY PLANET?

Moog hardware flies on thousands of Earth-orbiting spacecraft that are not shown on this infographic.
INTEGRATED SYSTEMS
When multiple Moog components are used together in a space system, our engineers lead and execute system-level trades, and help define subsystem architectures that support the overall mission.

PROPULSION
From components to manifolds to complete tank-to-thruster systems, Moog products support Electric, Chemical, Cold Gas and Green Propulsion Systems.

AVIONICS
A proven provider of high performance and reliable space-rated avionics hardware and software. Products include control and data handling, payload interface cards and mass memory, GPS receivers, motor and actuation drivers and controllers, and on-board computing. Moog offers off-the-shelf and custom avionics and software solutions. Many designs are rad-hardened for extreme environments.

MECHANISMS
For motion controls including solar array deployment and drive systems, antenna pointing mechanisms and instrument gimbals.

STRUCTURES, SHOCK AND VIBRATION CONTROL
Separates high vibrations areas of spacecraft from areas where significant vibration is not desired.

SPACECRAFT AND SATELLITES
Moog is a proven leader in components, subsystems and systems for the spacecraft market, including Spacecraft Controls, In-Space Propulsion, Spacecraft Payloads and Mission Planning. Moog has been successfully providing spacecraft solutions for science, military, and commercial applications.
SMALL LAUNCH ORBITAL MANEUVERING VEHICLE (SL-OMV)

The Small Launch Orbital Maneuvering Vehicle (SL-OMV) is a propulsive tug for secondary payload deployment focused on Venture Class Launch Vehicles (VCLV) vehicles. The SL-OMV is designed to launch on VCLV with a capacity of 150 kg or greater, including spaceport-based systems. It is payload configurable for cubesats through ESPA-Class spacecraft. It can be used to disperse cubesat constellations or deliver ESPA-Class spacecraft to their ideal orbit. The SL-OMV has its own avionics, power, green propulsion, and communications systems that are configurable for short duration missions.

COMET

The COMET is a propulsive tug for secondary payload deployment based on the Moog ESPA ring. It is designed to launch on NSSL-class launch vehicles supporting up to 1500 kg of secondary payloads. The COMET can be used to disperse small satellite constellations, act as a Hosted Payload platform, or deliver a single spacecraft to its ideal orbit.

ASTRO

The ASTRO is a high delta-V variant of the OMV to enable GTO to GEO or deep space missions. The ASTRO baselines a dual-mode hydrazine/NTO propulsion system. The ASTRO is designed for launch on NSSL-class vehicles and can support up to 700 kg of port-mounted payload.

JUPITER

The JUPITER is designed for LEO to GEO transfer missions as well as other long duration high delta-V missions. The JUPITER utilizes High Power Solar Electric Propulsion, featuring 2 x 12.5 kW hall effect thrusters. The JUPITER is designed to carry up to 1800 kg in payload, using the ESPA ring to mount up to 6 secondary payloads.
Moog has provided precision fluid and motion control solutions within the global market since the early 1950s. Extensive experience with electrohydraulic, electromechanical and electrohydrotastic actuation systems, vibration isolation, and fluid control components and systems has helped prepare Moog for the future of spaceflight.

**ACTUATION**
Offering Electrohydraulic (EH), Electromechanical (EM) and Electrohydrotastic (EHA) thrust vector control systems for first, second and third stages.

**PROPULSION**
A world class provider of fluid and pneumatic controls for launchers and manned exploration systems. Moog is an expert in earth storable and cryogenic propulsion components and systems. This technology is also used for in-space environmental control systems (ECLSS) for thermal and air breathing systems.

**AVIONICS**
A provider of processors, control cards, control systems and high power control for difficult space environments. Control electronics designed, developed and manufactured for actuation and mechanisms, data acquisition, engine and propulsion controls, guidance and navigation, ordnance, and power distribution and management.

**STRUCTURES, SHOCK AND VIBRATION CONTROL**
Tuned to each combination of launch vehicle and payload to ensure optimal performance while remaining compatible with attitude control systems. Products significantly reduce launch environments and allow more of the mass of spacecrafts to support off-orbit functions rather than launch survival.

**ORBITAL MANEUVERING VEHICLE**
The Orbital Maneuvering Vehicle (OMV) is a propulsive tug for secondary payload deployment based on the Moog ESPA ring. The OMV can be used to disperse small satellite constellations, act as a Hosted Payload platform, or deliver a single spacecraft to its ideal orbit. The OMV has its own avionics, propulsion, power, propulsion, and communications systems.
COMMITTED TO OUR LEGACY

- Avionics
- Actuation & Mechanisms
- Propulsion
- Power
- Structures
- Shock & Vibration Control
- Engineering Services

INVESTED IN OUR FUTURE

- Orbital maneuvering vehicles
- Post-boost stage propulsion systems
- Scalable thrust vector control components and systems
- Metal additive manufacturing
- Artificial Intelligence (AI) processing technology

FACILITIES AND CAPABILITIES WORLDWIDE

- Ground Testing
- Hot Fire Test Cells
- Class 10,000 Clean Rooms
- Metal Additive Manufacturing
- Full Environmental Testing
- Over 300,000 ft² Development Labs, Manufacturing and A&T areas
- 54,000 ft² Electronics Manufacturing and Test