

# WE ARE GOING

## MOOG'S RETURN TO THE MOON

### SPACE LAUNCH SYSTEM (SLS)

Tip to tail, Moog actuation systems steer the Space Launch System rocket, which is no easy feat considering it is the most powerful rocket ever built with 8.8 million pounds of thrust and traveling up to 6 miles per second.

The Artemis 1 rocket stands at 322 feet and is comprised of the cargo hold, core stage, and solid rocket boosters. It can carry a payload volume of 516ft<sup>3</sup>, up to 59,500 pounds.

#### 4 CORE STAGE AND BOOSTER THRUST VECTOR CONTROL SYSTEMS

- 12 Actuators
- 4 Actuation Controllers
- 2 Isolation Valves

### INTERIM CRYOGENIC PROPULSION STAGE (ICPS)

The Interim Cryogenic Propulsion Stage sits between the SLS core stage and Orion Crew Capsule. It provides the in-space propulsion for Orion after the solid rocket boosters and core stage separate.

It will set Orion on its course to the Moon before it separates and the service module takes over. On the Artemis 1 configuration, Moog supports the ICPS thrust vector control actuation.

#### 1 ACTUATION CONTROL SYSTEM

- 2 Actuators
- 1 Actuation Controllers
- 2 Inlet Valves

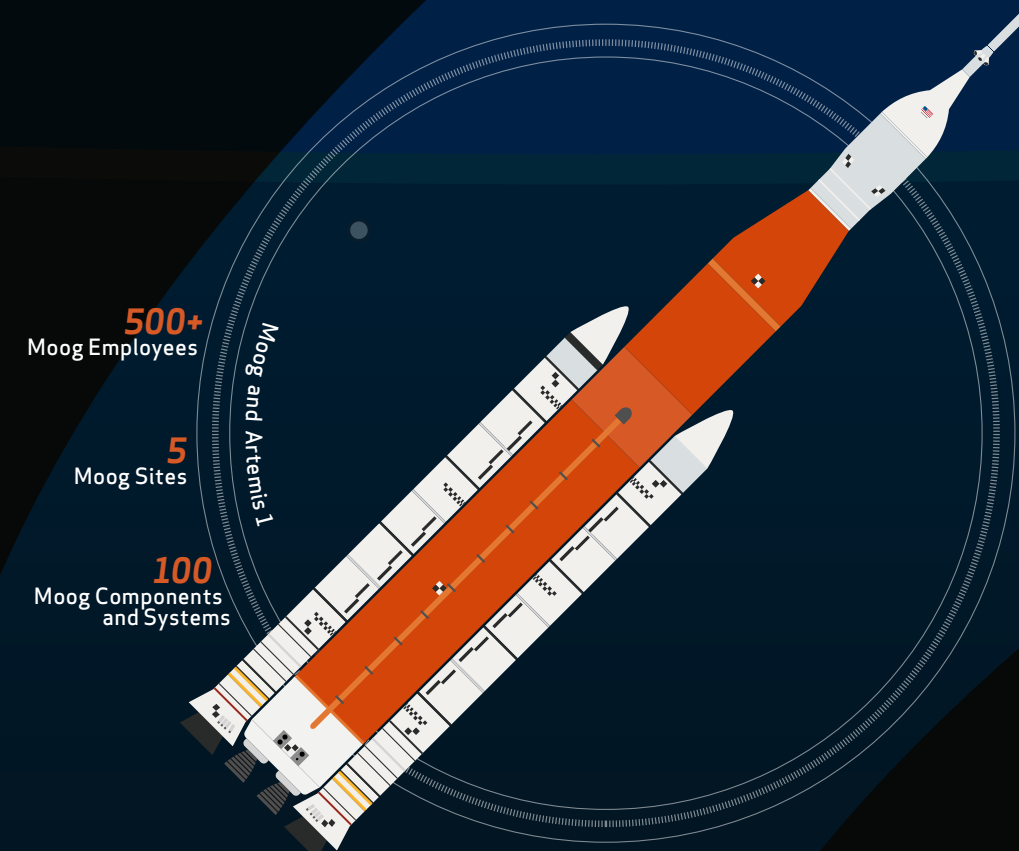
### ORION

The Orion crew capsule is made up of the launch abort system, crew module, and service module. Moog actuators ensure the launch abort system safely carries astronauts away from the SLS rocket if there is an emergency during lift off.

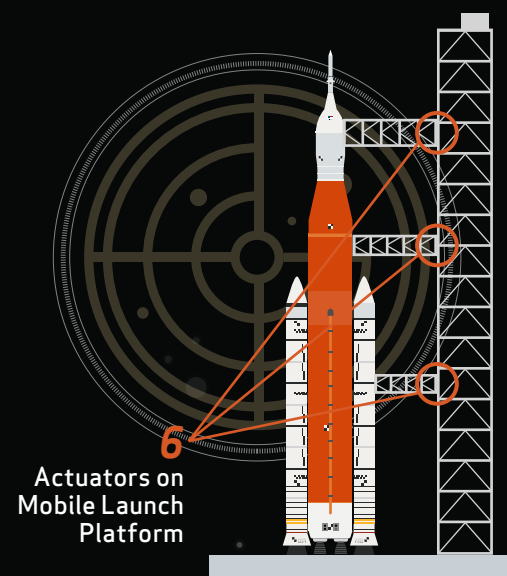
This is what ensures the crew capsule successfully orbits the Moon and returns to Earth. Moog supplies essential technology for crew capsule communications, life support, thermal regulation, and waste removal.

The service module provides the primary propulsion, power, and life support systems for the crew module.

- 8 Launch Abort Actuators
- 1 Pneumatic Actuator for the side hatch counter balance
- 6 Helium Valves (4 Types)
- 9 ECLSS Valves (5 Types)
- 48 Thruster Valves



### COVERED FROM LAUNCH TO SPLASHDOWN



From supporting ground operations to liftoff through splashdown, Moog technology enables NASA's Artemis missions from start to finish.

Moog actuators have been used in some capacity on almost every NASA launch that has utilized the mobile launch platform since Apollo, that includes the latest Artemis launch!

The actuators rotate the different gantry arms away from the vehicle at the time of launch in under a second. Plus, Moog helps secure the national air space around Kennedy Space Center during launches.

Finally, our technology is critical in steering the entire Artemis mission and ensuring safe environmental conditions for the crew capsule.

### MOOG HERITAGE

Moog designs and manufactures components and systems to survive the harsh environments of space travel.

For future space missions, Moog is investing significant resources into propulsion test facilities, radiation-hardened avionics, and innovative orbital maneuvering vehicles.

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 more than 60 years and enabled the Apollo 11 moon landing.

**12** Astronauts Assisted in Moon Landings by Moog Technology

**1200** Total Moog Space Sector Employees