



ATTITUDE CONTROL MOTOR

For the Orion Launch Abort System

Northrop Grumman's attitude control motor (ACM) consists of a solid propellant gas generator with eight proportional valves equally spaced around the circumference of the motor. All together, the valves exert up to 7,000 lb of steering force to the vehicle in any direction. The ACM's valve control is fully redundant. It is the first human-rated solid control system to be flight qualified. The motor has two critical functions:

- Steer Orion's launch abort system and crew module away from the launch vehicle in the event of an emergency
- Orient the capsule for parachute deployment once cleared from hazards

APPLICATION

- The ACM is part of a three-motor Launch Abort System designed to safely pull the Orion crew module away from the launch vehicle in the event of an emergency on the launch pad or during ascent

FEATURES

- Eight (8) high thrust fully proportional valves with single fault tolerant electro-mechanical actuation and 100 msec response full stroke
- Single fault tolerant controller
- Reliable solid-fueled gas generator based on a heritage propellant

TECHNICAL DATA

Weight: 1,741 lb (789 kg)

Length: 62 in. (1,574.8 mm)

Diameter: 32 in. (812.8 mm)

Case, External: D6AC Steel

Case, Internal: Aramid-filled ethylene propylene diene monomer (EPDM)

Propellant: Carboxyl-terminated polybutadiene (CTPB) composite



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