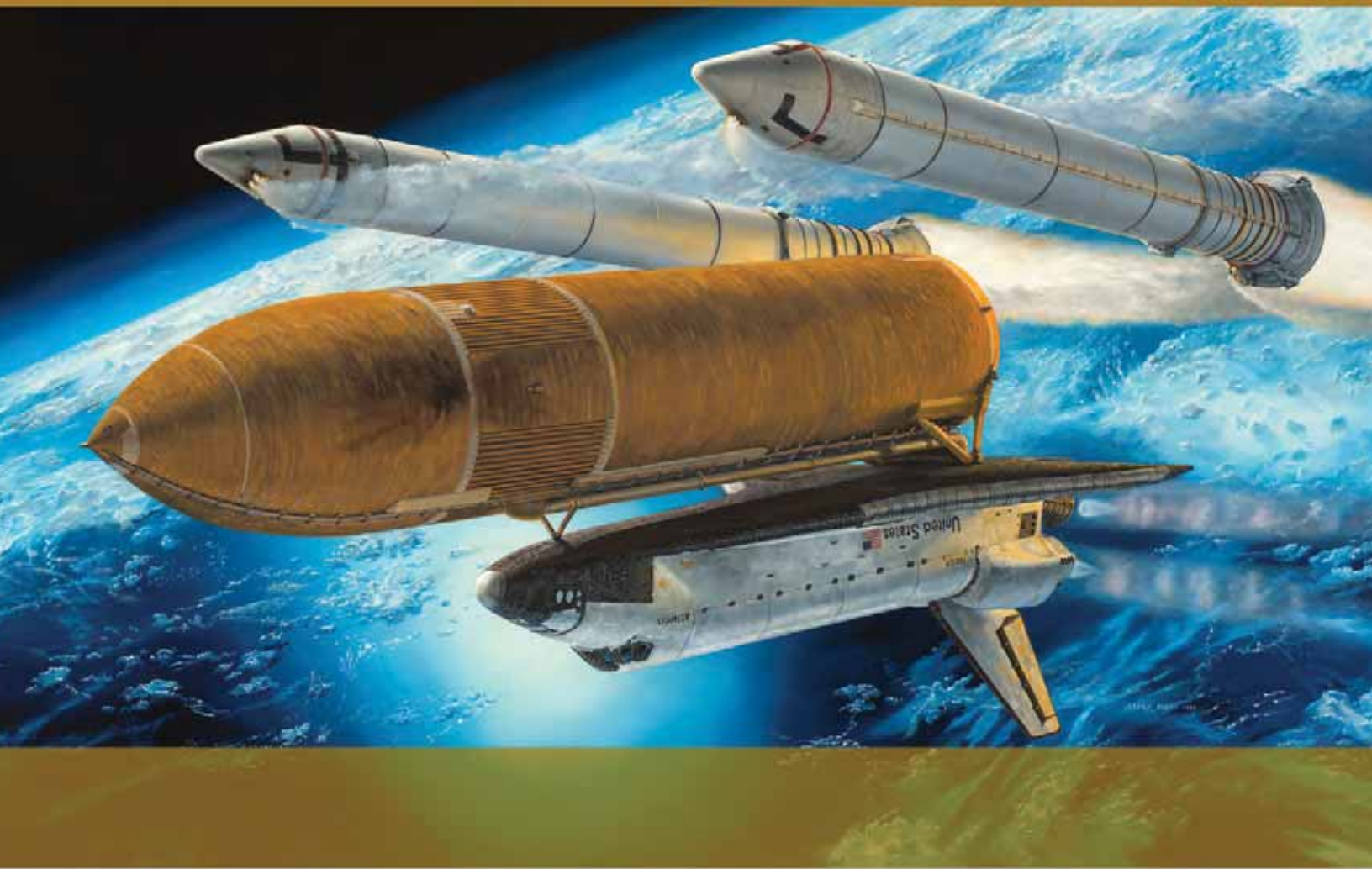


Booster Separation Motor

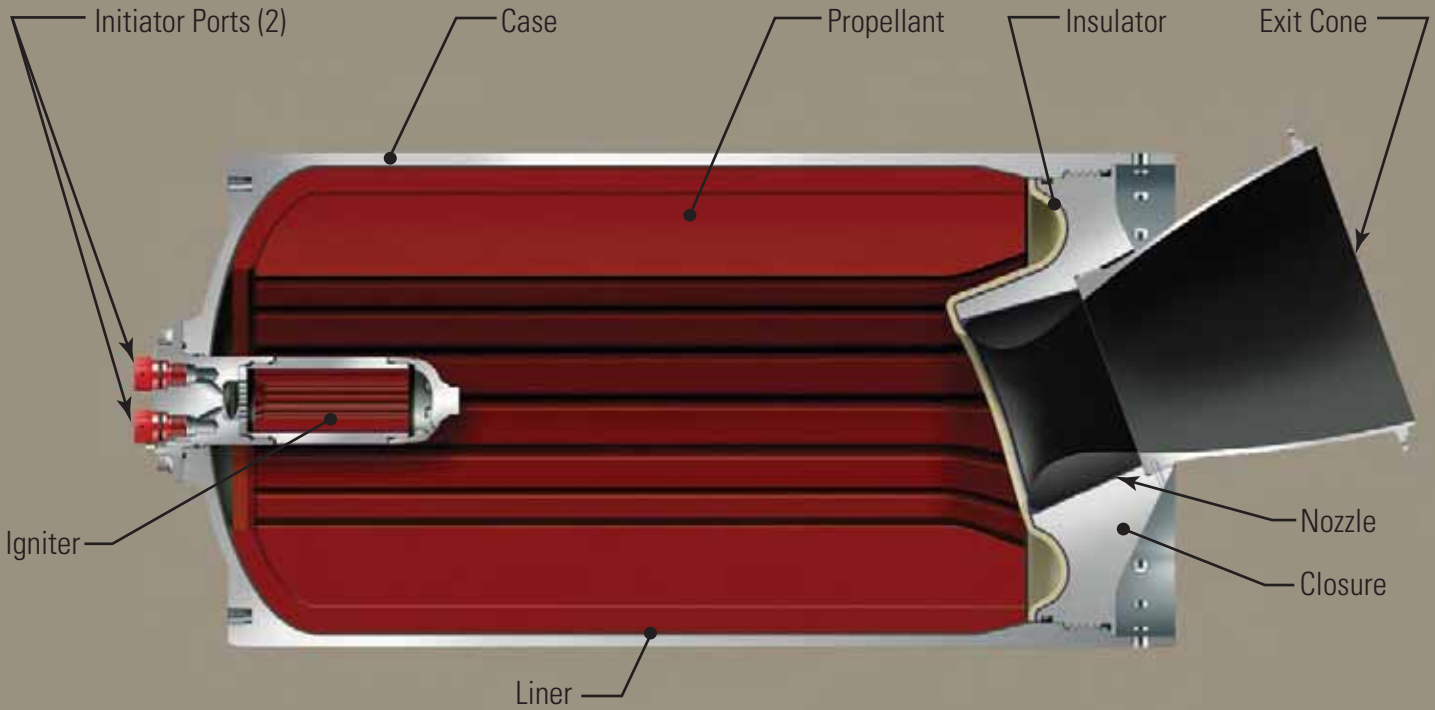


Booster Separation Motor

In 2003, NASA tasked ATK with redesigning and manufacturing the booster separation motor (BSM) for the Space Shuttle program from a previous source. This responsibility allowed ATK to completely redesign the BSM igniter to reduce ignition variation and incorporate material upgrades and improved inspection techniques. The new design took advantage of ATK's state-of-the-art production capability and incorporated ATK's stringent standard of quality and reliability demonstrated on the Space Shuttle reusable solid rocket motor.

As part of the flight certification efforts, ATK BSMs went through a full-scale static test program. Testing consisted of 25 development and demonstration motors, 18 qualification motors and 12 verification motors.

Sixteen BSMs are used on each Space Shuttle flight; four motors are located on the forward frustum and four are located on the aft skirt of each solid rocket booster (SRB). The BSMs are fired two minutes into the Shuttle flight, after the SRBs have finished their burn, jettisoning the SRBs away from the orbiter and external tank. As the orbiter continues its flight into space, the SRBs parachute back to Earth for retrieval, refurbishment and reuse.



Space Shuttle BSM

The redesigned BSMs maiden voyage was in the forward only positions aboard STS-122, the 121st Space Shuttle flight. This flight was launched into orbit on February 7, 2008, and was the 24th mission to the International Space Station. STS-126 is the first flight using ATK-designed BSMs in all forward and aft positions.



Qualification Test

NASA's future space vehicle, Ares I, will use a variation of the BSMs to decelerate and tumble the five-segment first stage motor launching Ares I to the moon, Mars and beyond.



Booster Separation



Space Shuttle Flight Configuration