

LIFT SYSTEM FOR ULTRASONIC INSPECTION

SPECIALTY SOLUTION #61

AEROSPACE/DEFENCE

- Lift 1: 1,200 lb. capacity, mechanical actuation, 60" L x 120" W , 240" vertical travel
- Lift 2: 3,500 lb. capacity, mechanical actuation, 120" L x 124.5" W 276" vertical travel
- Servo motor drive for smooth acceleration and deceleration
- Vertical repeatability of $\pm 0.010"$
- Machined surfaces on platforms for robotic interface



A major aerospace and defence integration firm approached Handling Specialty to custom engineer and manufacture an automated ultrasonic inspection system to inspect the exterior surface of a rocket shell using a robot. The lifts/robotic units work in tandem: one robot repeatedly raises and lowers inside the rocket shell on the scissor lift while the other matches this movement on the outside via the four-post lift.

Stability and precision of motion are critical to the accurate inspection of the rocket shell. Handling Specialty's four-post, ball screw-actuated lift platform has a vertical repeatability $\pm 0.010"$. It also has zero left to right sway and creep in any position. Linear bearings on the front section of the lift ensure position accuracy. Smooth acceleration and deceleration of the platform is achieved through the use of a servo motor.