

APPLICATION SOLUTION: Material Handling / Aerospace / Welding



Product Family: Electric
Product Used: RSA32
Product Type: Modified Standard

Application Requirements
Stroke: 2 inches

Application Description:

Clamping rocket fuselage plates for welding process.

Challenge:

A rocket manufacturer wanted to replace their pneumatic clamping system with electric for precise positioning and better coordinated movement in their welding operation. A concentric series of electric actuators was required to hold plates of the rocket fuselage in position and apply clamping force while welding. Once the clamping mechanism is in place, there could be no back-driving and strict tolerances for the actuators being used would be required. The homing to hard stop routine required an accuracy of $\pm .005$ inch (.127 mm).

Tolomatic Solution:

For the concentric series of actuators Tolomatic modified a series of RSA rod screw actuators to meet the positioning requirements using bronze nuts and screws. This screw/nut combination offered excellent life with no backlash. Once the plates were clamped into position, the actuator would perform the holding force rather than relying on the motor to hold the clamps in position. This allowed the motors to be run without positional feedback.

Customer Benefit:

- Electric actuators provided precise positioning for increased welding efficiencies
- Customized actuator solution reduced overall machine cost
- High build quality with fast delivery kept production on schedule