



A considerable amount of testing goes into the development, qualification, and acceptance of each new TiNi product. These are summarized below:

**Development**

The development effort encompasses the massive trial and error period which ultimately results in the final product. The Frangibolt and Pinpuller product lines were developed for NASA and NRL, respectively. In each case, greater than 3 years and 1 million dollars was invested in refining each design into a flight qualifiable product. TiNi Aerospace holds the exclusive patent on these technologies.

**Qualification**

Qualification tests are performed on each new product and or when the requirements of a new application add to or exceed the levels of a product already qualified. Qualification tests typically include a host of functional tests under worst case environmental conditions including Thermal Vacuum, Shock, and Vibration.

TiNi Aerospace routinely performs this type of testing on new and or modified actuators either using our in-house facility or by working closely with one of our certified vendors.

**Acceptance**

TiNi Aerospace performs Acceptance tests on all products manufactured as a final screening technique against workmanship related problems. This is key in consistently delivering products which meet the aerospace industry's high demand for performance and reliability. As an example,

all Frangibolt actuators are functioned a minimum of 6 times at various voltage and using both the primary and secondary circuits prior to shipment. Similarly all TiNi Pinpullers and Actuators are functioned a minimum of 18 times using both firing circuits and at different power levels.

Testing is a big part of providing quality mechanisms for the aerospace industry and we are proud to have performed more than 10,000 releases with our Frangibolt actuators.

