

PINPULLER

Non-Explosive Actuators (NEA)



TiNi Aerospace's family of SMA actuated Pinpullers may be used to secure and release numerous spacecraft deployables. Pin retraction is achieved by coupling the recovery characteristics of Shape Memory Alloy (SMA) material with TiNi's patented detent mechanism. Nitinol (Nickel-Titanium) wire is used to trigger energy release stored in a loaded compression spring. Although a growing number of embodiments have already been developed and flight qualified, custom configurations are readily attainable with minimal effort.

Advantages of the TiNi Pinpuller include the following:

Flight Qualified

Since its outer space debut aboard the Mars Global Surveyor spacecraft, the TiNi Pinpullers have been qualified and used on numerous other space applications.

Fast Acting

By directly passing current through the Nitinol wire, the Pinpullers perform in millisecond time frame making them ideal for synchronized and simultaneous release of multiple tie-down payloads.

Simple to Use and Reset

The mechanism is reset by simply re-extending the output shaft or Pin which may be accessed from the front or rear of the Pinpuller.

Redundant

Unless otherwise requested all Pinpullers incorporate a second Nitinol "trigger" capable of independently functioning the actuator.

Reusable and Reliable

The Pinpullers may be used hundreds of times during acceptance and system level testing.

Detailed Specification

See spec sheet for each model or contact TiNi Aerospace at the address below.

