

PRODUCT FAMILY

MECHANICAL PULL INITIATOR

Mechanical Pull Initiators are used to initiate a Canopy Fracture Systems (CFS) and Transparency Removal Systems (TRS). They rely on the upward movement of the ejection seat or pulling of an attached cable to pull a shaft(s) or have the seat strike a ‘trip’ lever on a firing pin mechanism to function (fire) the initiator. The initiators can be configured for single or dual firing pin mechanisms and single or dual output. Examples of the initiators we’ve designed are shown at right.



APPLICABLE SPECIFICATIONS

Operating Temperature:	-65°F to +200°F
Leak Rate:	1×10-5 cc/sec. Air at 1.1 + 1Atmosphere
Low Temperature:	Conditioned at -80°F for two hours, -65°F for 70 hours then fired successfully.
High Temperature:	Conditioned at +200°F for 50 hours, functioned successfully
Iced Condition:	MIL-C-83124 paragraph 4.5.11.10: Temperature -80°F & stabilized, then placed in 100°F/90% relative humidity until ice disappears, then -80°F & stabilized then fired at -80°F
Altitude:	Placed in vacuum chamber at 1.32 inches Hg and temperature of -65°F. Conditioned for one hour and functioned with no performance degradation.
Submerged Condition:	MIL-C-82124: Submerged in water tank then tank pressurized to 17.75 psig to simulate 40 feet, then fired.
Shock:	MIL-STD-810, Method 516, Procedure 1: Peak Amplitude of 30 G for 11 milliseconds;
Temperature Shock:	Shock pulse wave form: Terminal peak saw tooth for a total of 18 impacts. 100 cycles between -70°F and +200°F with 55 minute duration at each extreme then units functioned with no adverse effect.
TSH&A	MIL-C-83124, Paragraph 4.5.11.7 at 70K Feet Altitude
Lock Shut:	MIL-C-83124, Paragraph 4.5.12.1, Devices lock shut then fired at -65°F and +200°F
Vibration:	MIL-STD-810, Method 514, Procedure I, parts 1-3, Procedure I, & curve z at -65°F, +70°F, and 200°F
Salt/Fog:	MIL-STD-810, Method 509: 5%+1% Sodium Chloride by Weight for 48 Hours plus 48 Hours drying time. Fired at 70°F.
Dust:	MIL-STD-810 Method 510, Except High Temperature 200°F.
6 Foot Drop:	Dropped Firing Mechanism Up, Firing Mechanism Down and Side, then fired
40-Foot Drop:	IAW MIL-STD-331A, Test 103.1 Procedure 1 Dropped Firing Mechanism Up, Firing Mechanism Down and Side. Units did not fire and were safe to dispose of.
Humidity:	Per MIL-STD-810 Method 507 Procedure I except relative humidity was 100% and temperature +200°F with no adverse effect.