NEA Electronics
a subsidiary of Ensign-Bickford Aerospace & Defense Company

RIGHT FOR YOUR MISSION

Global Leader

NEA® Electronics, Inc. is a global leader in spacecraft mechanisms. Our low shock release devices are relied upon for spaceflight applications more than any other device.

Reliable

Our designs are reliable, simple, insensitive to adverse environments and backed up by years of heritage and loyal customers.

Quality Assured

NEA, a trusted supplier of mission critical components, is certified to ISO 9001:2008 and AS9100:2009 C

NEA Model 1120 Pin Puller

Model 1120 Product Data Sheet

The same Split-Spool technology that made NEA the global leader in non-pyrotechnical Hold Down & Release Mechanisms is also available in NEA's Pin Puller mechanisms. The NEA Model 1120 Pin Puller can provide pull forces from 50 N to 90 N (11 lbf to 20 lbf).

Applications

Typical applications include:

- Antennas
- Scientific instruments
- Solar arrays
- Reflectors
- Satellite, spacecraft payloads
- Booms and masts
- Stage separation
- Caging mechanisms

Principle of Operation

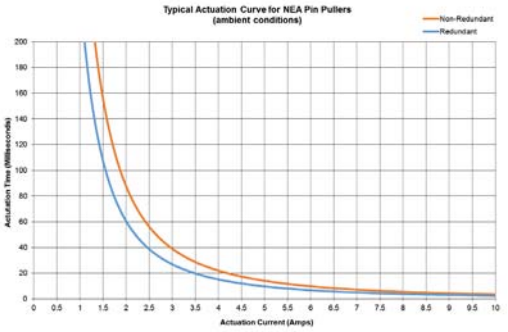
NEA Pin Pullers consist of a spring-loaded plunger that is restrained using the same patented split-spool and bridge wire technology used in our Hold Down & Release Mechanisms. The spool subassembly includes two spool halves which are held together by a tight winding of a restraining wire that terminates in a bridge wire connecting two electrical terminals at the electrical interface to the device. The spool assembly, by virtue of the restraining wire winding, can prevent axial motion of the plunger. When sufficient electrical current is passed through the terminals and the bridge wire, the bridge wire heats up and breaks under the applied tension load. This allows the restraining wire to unwind, separating the spool halves and releasing the spring-preloaded plunger.

The actuation method is simple and reliable and forms the basis of actuation for many of NEA's other products including: Release Mechanisms, Battery Cell Bypass Switches and Non-Pyrotechnic Valves.

Key Features

- Extremely low release shock
- Redundant or non-redundant actuation circuit
- Near simultaneous release of multiple hold-down points (<10 ms)
- Extended operating temperature range
- Can be operated with pyrotechnic initiation circuitry
- Range safety friendly
- Space-rated materials

Actuation Time



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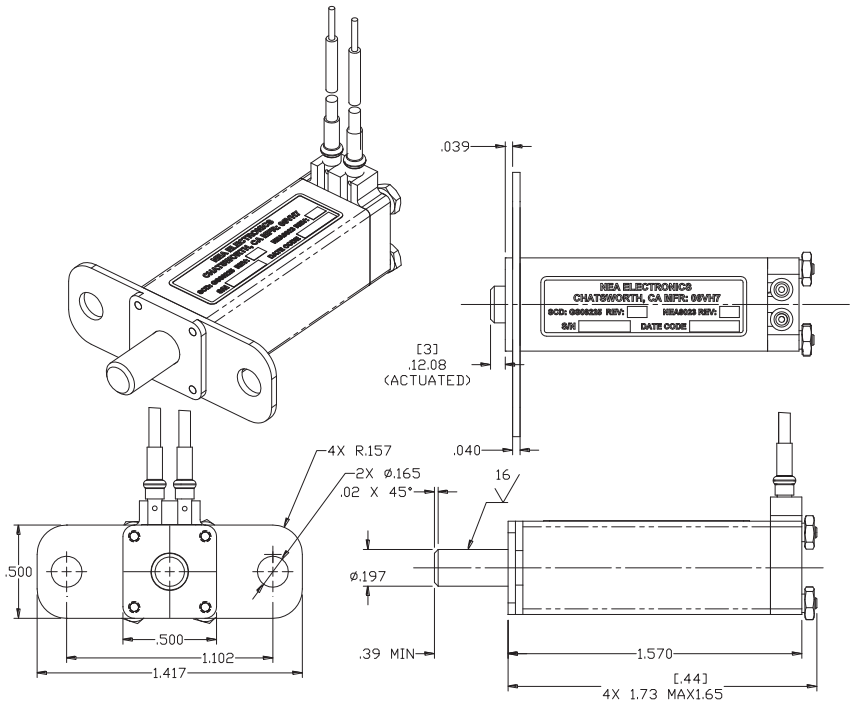
Model 1120 Technical Specifications

Parameter	Capability
Pull Force at Beginning of Stroke	90 N (20 lbf)
Pull Force at End of Stroke	50 N (11 lbf)
Fuse Wire Resistance	0.95 to 1.6 Ω @ 25°C
Actuation Current[1]	4 Amps for 25 ms
No-Fire Current[2] (continuity)	400 mA
Release Time[3]	<50 ms
Qualification Temperature Range[4]	-60°C to +150°C
Mass[5]	55 g (1.94 oz)

Notes:
[1]Actuation can be achieved using a range of current, the value in the table is the value used for qualifying this device.
[2]No-fire current for 5 minutes or less as ambient temperature, consult NEA applications engineers for other no-fire current requirements.
[3]Release time is dependent on actuation current, contact applications engineering for more specific information on actuation time as a function of current.
[4]The values presented for qualification temperature range are not a measure of the limits of the device.
[5]Mass does not include harnessing and lead wires.

Model 1120 Mechanical Interface Drawing



Mission Success

NEA® Electronics, Inc. is dedicated to building mankind's legacy in space by supporting our customers in the aerospace industry through on time delivery of innovative products that exceed expectations and assure mission success.

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Cleared for Open Publication by the Office of Security Review, Department of Defense 04/24/2014 14-S-1253