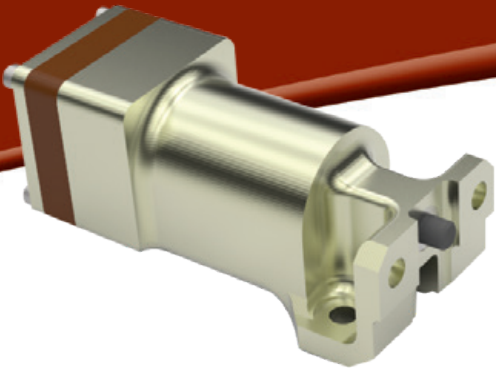


Mission Success

Ensign-Bickford Aerospace & Defense Company (EBAD) is dedicated to supporting our customers in the aerospace and defense industry through on-time delivery of innovative products that exceed expectations and assure mission success.



Model 2545 Pin Puller

The same split-spool technology that made EBAD the global leader in non-pyrotechnical Hold Down & Release Mechanisms is also available in EBAD’s NEA® Pin Puller mechanisms. The NEA® Model 2545 Pin Puller can provide pull forces from 25 lbf to 45 lbf (111 N to 200 N).

Principle of Operation

The NEA® Pin Puller 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 EBAD’s other products including: Release Mechanisms, Battery Cell Bypass Switches, and Non-Pyrotechnic Valves.

Applications

- Typical applications include:
- Antennas
  - Scientific instruments
  - Solar arrays
  - Reflectors
  - Satellite and spacecraft payloads
  - Booms and masts
  - Stage separation
  - Caging mechanisms

Key Features

- Extremely low release shock
- Redundant or non-redundant actuation circuit
- Can be operated with pyrotechnic initiation circuitry
- Range safety friendly
- Space-rated materials
- Factory refurbishment

Model 2545 Technical Specifications

Parameter	Capability
Pull Force at Beginning of Stroke	45 lbf (200 N)
Pull Force at End of Stroke	25 lbf (111 N)
Fuse Wire Resistance	1.2 to 2.0 Ω @ 25°C
Actuation Current <sup>1</sup>	4 Amps for 25 ms
No-Fire Current <sup>2</sup> (continuity)	250 mA
Release Time <sup>3</sup>	<50 ms
Qualification Temperature Range <sup>4</sup>	-101°C to +172°C
Mass <sup>5</sup>	182 g (0.40 lb)

Notes:

<sup>1</sup> Actuation can be achieved using a range of current, the value in the table is the value used for qualifying this device.

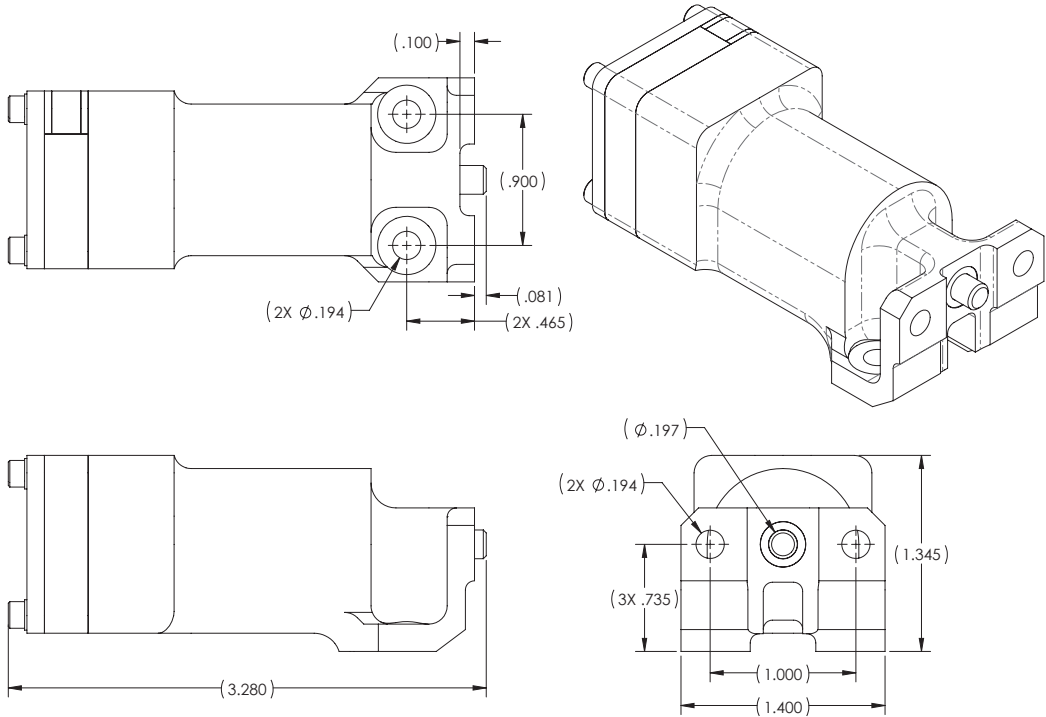
<sup>2</sup> No-fire current for 5 minutes or less as ambient temperature, consult EBAD applications engineers for other no-fire current requirements.

<sup>3</sup> Release time is dependent on actuation current, contact applications engineering for more specific information on actuation time as a function of current.

<sup>4</sup> The values presented for qualification temperature range are not a measure of the limits of the device.

<sup>5</sup> Mass does not include harnessing and lead wires.

Model 2545 Pin Puller Mechanical Interface Drawing (for reference)



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