

NEA® 15" Payload Release Ring (PRR-15)

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.

NEA® 15" Payload Release Ring (PRR-15)

For nearly 60 years EBAD has supplied launch vehicles and the space market hardware to support initiation, separation, and flight destruct. The NEA® 15" Payload Release Ring (PRR-15) utilizes the flight-proven technology of the NEA[®] mechanism product line to release payloads from a launch vehicle.

Principle of Operation

The NEA® 15" Payload Release Ring consists of four NEA® release mechanisms, two ring halves, and separation springs with corresponding holders. The four NEA®'s are utilized to compress the separation springs and hold the two ring halves together. The PRR-15 is then attached to the payload. The PRR-15, and attached payload, are mounted to the launch vehicle utilizing 24 fasteners.

The NEA® 15" Payload Release Ring is electrically connected to the launch vehicle via redundant connectors. The connector will be connected to each of the NEA® release mechanisms. An additional connector is provided in order to provide communication between the launch vehicle and the payload.

The payload is released when the launch vehicle applies current to the PRR-15 connector. The NEA® 15" Payload Release Ring connector distributes the current to the four NEA® release mechanisms, which actuate and allow the separation springs to separate the payload from the launch vehicle.

Applications

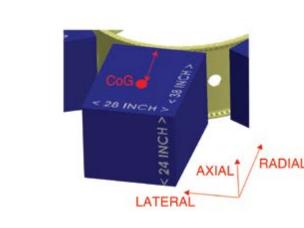
Typical applications include:

- Launch vehicle payload release
- Ø15" circular port with 1/4" fasteners
- Other port sizes can be developed

Key Features

- Low release shock
- Redundant actuation circuit
- Low mass (see Specifications Table)
- Can be operated with standard launch vehicle circuitry
- · Launch vehicle to payload connector interface
- Meets standard tip off requirements
- Customizable separation velocity (4-20 push off springs)
- Qualified to standard launch environments
- Space-rated materials
- Factory refurbishment

¹ Maximum allowable payload mass is dependent on the Center of Gravity of the payload. A 250 kg mass is acceptable with a CoG of 15" from the launch vehicle or less.



NEA® 15 "	Payload	Release	Ring	(PRR-	15)	Tec
------------------	---------	---------	------	-------	-----	-----

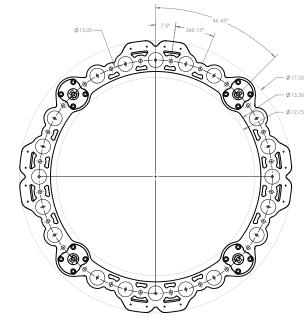
Parameter	Capability		
Payload Capability	250 kg1		
Shock Output ²	<300 g's		
Release Time ³	<40 ms		
Total Mass	6.4 lb (2.9 kg)		
Fly Away Mass	2.2 lb (1 kg)		
Temperature Range	-40°C to +102°C		
Spring Energy, J	3.57		
Number of Springs	4 to 20		

Notes:

- ¹ Maximum allowable payload mass is dependent on the Center of Gravity of the payload. A 250 kg mass is acceptable with a CoG of 15" from the launch vehicle or less
- ² Indicates payload side. Shock output was measured by mounting the ESPA ring launch vehicle interface to an aluminum 6061 0.75" x 24" x 24" test fixture, and to a secondary plate of the same characteristics on the payload interface.
- 5A to 4 separate lines.

Contact EBAD for additional technical data

NEA® 15" Payload Release Ring (PRR-15) Mechanical Interface Drawing (for reference)





ENSIGN-BICKFORD AEROSPACE & DEFENSE COMPANY 640 HOPMEADOW STREET, P.O. BOX 429, SIMSBURY, CT 06070, USA www.EBAD.com

NEA® is a registered trademark of NEA Electronics, Inc. This product and its components are protected under U.S. Patent Numbers 6,433,990 / 6,249,063 as well as nt Numbers 125567 / 9903335, U.K. Patent Number 1255675 and Germany Patent Number 60111923.1.

endations described in this brochure cannot possibly cover every application of the products or variation of conditions under wh nce, research and testing. They are believed to be accurate, but no warranties are made, express or implied. In addition, the spe lations here in roducts are used. The rec are based on the manufacturer's exp which represent our current production. The products described may be subject to change. Please feel free to contact Ensign-Bickford Aerost bace & Defense Company for verification. No Wa or Liabilities: THE PRODUCTS DESCRIBED HEREIN are sold "AS IS" and without any warranty or guaranty, express, or implied, arising by law or otherwise including without limit warranty of merchantability or fitness for a particular purpose. Buyer and user agree further to release and discharge seller from any and all liabilities whatsoever arising out of the second se the purchase or use of any product described herein whether or not such liability is occasioned by seller's negligence or based upon strict r principles of indemnity or contribution. Content@2022 Ensign-Bickford Aerospace & Defense Company, Simsbury, CT 06070, U.S.A.

www.EBAD.com

Cleared for Open Publication by the Defense Office of Prepublication and Security Review, Department of Defense 04/20/2022 22-S-1641

Payloads up to 250 kg¹

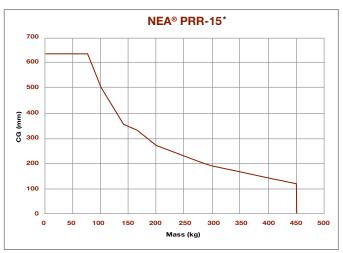
- High stiffness (see Stiffness Table)

- No debris generation

NEA[®] 15" Payload Release Ring (PRR-15)

chnical Specifications

³ Release time is based on the current supplied, the stated time is based on the SpaceX electrical interface, capable of simultaneously applying



*this data does not include local movements or any factors of safety or margin.