



## Aero Engine Water Vapour Resistant (WVR) "Aero-Bag"

Developed for Trent 700-1000, XWB, GE90 & PW4000 Turbofan Engine

The Aerotest Aero Engine Water Vapour Resistant (WVR) Aero-bag preservation system enables large commercial Turbofan engines to be protected during periods of storage and transportation by ground or air whilst mounted onto a storage/ transport support stand.

The durable WVR Aero-Bag forms an upper and lower bag section, both sections attached together with an air-tight integrally welded continuous zip seal that is fully separable ensuring the total WVR Aero-bag system to be reliable and 100% reusable to completely enclose and protect the engine.

The lower section installs directly onto the transportation stand prior to the engine being installed, providing the seal between the engine mounts and the stand interface points.

Once the engine is installed onto the stand and lower Aero-bag, the upper section can then be installed and both can be joined and sealed together by closing the continuous zip and final closure system. Each WVR Aero-bag is unique in size and shape to the Turbofan engine, minimising excess material and the total internal volume requiring conditioning.

The WVR Aero-bags are produced in two standard colours Light Blue and Olive/ NATO Green, additional colours are available upon request.

The Aerotest WVR Aero-bag has been designed and developed using the same technology for military applications which has been rigorously tested and approved and used in the field by global companies such as Lockheed Martin, Rolls Royce & Pratt and Whitney.

Following manufacture, each WVR Aero-bag is pressure tested with air to test all welds and closure zip seals to prove design integrity and thus maintaining high quality future standards for the operator.



The Aerotest WVR Aero-bag has become a very effective and essential cost-effective tool as part of the storage and servicing regime for the end user/ operator as well as service providers worldwide.

### WVR Aero-bag Identification

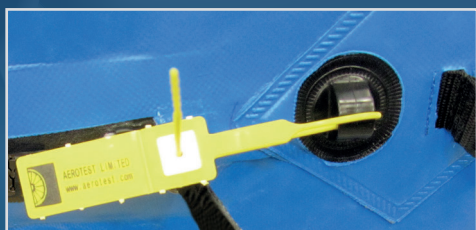
Each WVR Aero-bag is individually identified with the following information:

- WVR Aero-bag Part Number.
- Description & Warning labels
- Individual Serial number.
- Upper & Lower bag designation.
- Screen Print Aerotest & Customer Logo's

## GROUND SUPPORT EQUIPMENT

### Special Features and Specification

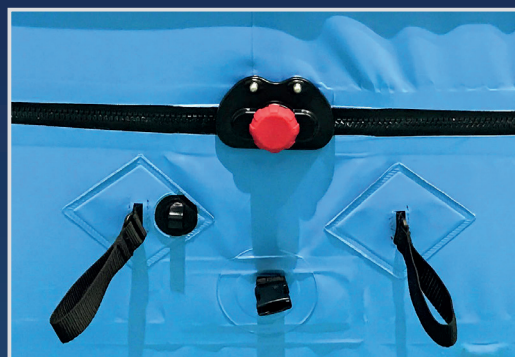
- Each WVR Aero-bag is supplied in lightweight fabric transport bags, one for each section, this simplifies transportation and ensures that all elements of the Aero-bag system remain together as a complete working unit.
- The WVR Aero-bag is manufactured from an EVA-PVC alloy fabric, which has excellent durability and chemical resistance.
- The Fabric has been tested in house with total fluid immersion in Kerosene and MIL- PRF-5606H Mineral Oil. Contact with Ester based hydraulic fluids such as Skydrol should be minimised where possible.
- The WVR Aero-bag material has a rated temperature envelope of -40 to +70°C (-40 to 158°F)
- The preservation system is monitored by observing an Environmental digital indicator capable of reading relative humidity, temperature and dew point of the environment within the WVR Aero-Bag.
- Lifting straps for installing and removing the upper section of the WVR Aero-Bag.
- A single Porthole is included located at the lowest point of the lower section of the WVR Aero-Bag for drainage purposes.
- Front and rear mounting sealing gaskets for sealing between engine mounts and the stand interface points.
- Clear viewing panels are included.
- Welded anti-tamper tags for all zip closure points for locking the zips seals during storage and transportation.
- Attachment straps along the length of the zip seal assist with closure of the upper and lower bag sections.



- The WVR Aero-bag has an external sealable panel to store engine logbook records and standard repair kit and store records documents.

### Special Features and Specification

- An integrally welded open-ended separating air-tight zip seal is welded in a horizontal direction around the circumference of the Aero-bag, allowing for the upper and bag sections to be separated. The zip design requires no special tooling for closure or opening of the zip.
- A unique sealing mechanism at the rear of the Aero-bag allows for the zip to be separated but still provides for an air-tight closure at the start and end of the zip.



- Along each side of the fan casing and at the rear of the tail pipe is a closed-end integrally welded air-tight zip seals welded in a horizontal direction, their primary function is to provide an access point to remove and/ or replace the silica gel without breaking into the primary separating zip seal.
- Velcro zip-protection flaps are included along the length of all air-tight zip seals as a secondary means of protection.



- The WVR Aero-bag includes an Integral pressure relief valve, this ensures the Aero-bag is not over pressurised when leak testing following manufacturer.
- Laminated installation / operating Instructions, Safety Data sheets, Repair Kit and procedures are supplied with each WVR Aero-bag.
- This design concept can be used for other engines and transport stands, please enquire if you have a specific requirement.



**Aerotest Limited**

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Aerotest Limited is an ISO BS EN 9001: 2015 registered company with a quality approval certificate, number FM6664.



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