

Special Cleaning and Packaging Process (FC-02)

This Specification is enacted for the safety of wetted parts which are utilized in oxygen-enriched environments and in contact with media.

The product cleanliness requirements performed according to this Specification are in accordance with ASTM G93, Level C. Please read this Specification carefully before using the product to make sure it is up to the cleanliness requirements of your system.

Process Requirements

- ⦿ Products should have fulfilled the requirements of the FITOK *Standard Cleaning and Packaging Process (FC-01)* before proceeding according to this Specification.
- ⦿ All assembling, lubricating, testing and packaging of the components should be performed according to this Specification.
- ⦿ According to the requirements of ASTM G93, Level C, non-volatile residues should not exceed 6 milligrams per square foot (66 mg/m²).
- ⦿ All lubricants applied for assembly of the products should be non-hydrocarbon lubricants which are in harmony with oxygen environments, such as KrytoxGPL227 (standard), Krytox240AC (optional).
- ⦿ Products are double packaged with polyethylene bags, with the outer packing bags labeled with process identification.

Cleaning, Drying, and Inspection

- ⦿ The product should go through continuous ultrasonic cleaning, the procedures of which should be monitored in accordance with the requirements of ASTM G144. The inspection methods shall conform to the requirements of ASTM G121 and G122.
- ⦿ Carry out ultrasonic cleaning in accordance with the requirements of ASTM G131 with the cleaning agent complying with ASTM G127.
- ⦿ Use DI Water to proceed ultrasonic rinsing and spray washing according to the requirement of ASTM G313.
- ⦿ Eliminate cleaning fluid through non-combustive drying to ensure there is no residue deposit.
- ⦿ Carry out visual inspection under bright lighting or violet lighting conditions. Inspect the surface cleanliness of products with a dyne pen.

Assembly and Testing

- ⦿ Cleaned parts should be protected to avoid damage or contamination.
- ⦿ All proceedings of the cleaned parts shall be carried out in the clean room in accordance with a rational workflow to keep the parts away from contamination.
- ⦿ During assembly, lubricate the parts where needed with non-hydrocarbon grease to reduce friction, improve sealing and to ensure product cleanliness.
- ⦿ Factory testing of products is carried out with clean, dry nitrogen or helium.

Packaging and Labeling

- ⦿ Finished products are packaged in clean environment to protect them from contamination.
- ⦿ The ports of products are sealed with caps, plugs or other means to protect the important positions and at the same time to prevent the contamination getting inside the products.
- ⦿ Each product is packaged individually with a sealed clean plastic bag.
- ⦿ Bagged products are packed in boxes for protection.
- ⦿ Part Number, quantity, and packing date are labeled on the boxes.

References

Standard Cleaning and Packaging Process (FC-01)

ASTM Standards

ASTM G93 Standard Practice for Cleaning Methods and Cleanliness Levels for Material and Equipment Used in Oxygen-Enriched Environments

ASTM G121 Standard Practice for Preparation of Contaminated Test Coupons for the Evaluation of Cleaning Agents

ASTM G122 Standard Test Method for Evaluating the Effectiveness of Cleaning Agents

ASTM G127 Standard Guide for the Selection of Cleaning Agents for Oxygen Systems

ASTM G131 Standard Practice for Cleaning of Materials and Components by Ultrasonic Techniques

ASTM G144 Standard Test Method for Determination of Residual Contamination of Materials and Components by Total Carbon Analysis Using a High Temperature Combustion Analyzer