RTCA DO-160G Spray Proof Test Nozzle

Section 10 Category R Spray Proof Test Nozzle per Figure 10.2

Standards: RTCA DO-160G Section 10 Category R, Figure 10.2
Manufacturer: KingPo Test Equipment Co., Ltd. www.dgkingpo.com Tel: +86-769-81627526

1. Product Overview

The KingPo RTCA DO-160G Spray Proof Test Nozzle is a precision copper shower head nozzle designed for Section 10 Category R waterproofness testing of airborne equipment. It is manufactured according to RTCA DO-160G Section 10 Cat R, Figure 10.2, with a DN20 thread and specified nozzle hole arrangement to produce a controlled water spray pattern simulating exposure to rain or cleaning processes.

This nozzle is suitable for aerospace equipment manufacturers, environmental testing laboratories, and certification bodies to evaluate the sealing and moisture protection performance of avionics, sensors, and other airborne devices. It helps verify equipment resistance to water spray during flight, ground operations, or maintenance activities.

2. Key Advantages

- **Designed for RTCA DO-160G Section 10 Category R Test Requirements**
  Engineering: Manufactured to RTCA DO-160G Section 10 Cat R, Figure 10.2 specifications with precise hole configuration (4 × Φ1.6 mm + 4 × Φ2.31 mm).
  Benefit: Enables standardized and repeatable spray proof waterproofness testing for airborne equipment, supporting compliance with aviation environmental test requirements.
- **Precision Copper Construction**
  Engineering: High-quality copper material with high-precision drilled holes for consistent spray patterns and excellent corrosion resistance in water spray environments.
  Benefit: Maintains dimensional accuracy and spray performance over time, ensuring reliable and repeatable test results with minimal maintenance.
- **Standard Thread Connection for Easy Integration**
  Engineering: DN20 (G3/4″) thread connection allows straightforward integration with existing water supply systems and test rigs.
  Benefit: Simplifies setup in environmental test laboratories and reduces the need for custom adapters or modifications.
- **Controlled Spray Pattern for Realistic Simulation**
  Engineering: Specific hole arrangement produces a controlled water spray that simulates rain and cleaning process exposure as defined in the standard.
  Benefit: Provides realistic and standardized test conditions to accurately assess equipment sealing performance under spray conditions.
- **Fast Delivery & Easy Procurement**
  Engineering: Standard configuration with short lead time (typically 5 working days) and low MOQ (1 set).
  Benefit: Enables laboratories and manufacturers to quickly obtain the required test nozzle for DO-160G compliance testing without long delays.

3. Technical Specifications

3.1 Performance Parameters

Parameter	Specification	Remark / Notes
Applicable Standard	RTCA DO-160G Section 10 Cat R, Figure 10.2	Spray proof waterproofness test
Nozzle Material	Copper	Good corrosion resistance and durability
Hole Configuration	4 × Φ1.6 mm + 4 × Φ2.31 mm	Precision-drilled for required spray pattern
Thread Connection	DN 20 (G3/4″)	Standard thread for easy integration
Spray Type	Controlled water spray	Simulates rain and cleaning processes
Manufacturing Precision	High-precision hole drilling	Ensures consistent and repeatable spray

Testing Principle

The nozzle is used to perform spray proof waterproofness tests on airborne equipment according to RTCA DO-160G Section 10 Category R. Water is directed through the precisely arranged holes onto the equipment under test for a defined duration, while the equipment may be operating or non-operating.

The test assesses whether water can ingress into the equipment and whether the equipment continues to function correctly after exposure. It simulates spray conditions that airborne equipment may encounter during flight, ground operations, or maintenance activities.

4. Best Practices

1. Keep nozzle holes clean and free from blockages or mineral deposits to maintain consistent spray patterns.
2. Maintain the specified water pressure and flow rate for consistent spray characteristics.
3. Position the nozzle at the correct distance and angle to ensure even water exposure on the test specimen.
4. Inspect the copper nozzle regularly for wear, deformation, or corrosion, especially after prolonged use.
5. Follow RTCA DO-160G Section 10 Category R test procedure and safety guidelines.

5. Typical Applications

- Aerospace equipment manufacturers — Spray proof waterproofness testing of avionics and sensors
- Environmental testing laboratories — RTCA DO-160G compliance testing
- Certification bodies — Airborne equipment qualification and certification support
- Aircraft manufacturers and suppliers — Moisture ingress evaluation
- Research institutions — Study of moisture ingress behavior in aerospace equipment

6. Supply Options & Support

Factory verification of hole dimensions and spray pattern consistency is recommended. Technical guidance for installation, water pressure, and test setup is available upon request.

7. Compliance & Manufacturer

This nozzle is designed and manufactured to meet RTCA DO-160G Section 10 Category R, Figure 10.2 specifications for spray proof waterproofness testing of airborne equipment.

Manufactured under ISO 9001, ISO 14001, and ISO 45001 certified management systems. CE, RoHS, PSE, and SGS documentation can be provided upon request according to the applicable equipment configuration.

KingPo Test Equipment Co., Ltd.

Hengkeng Industrial Zone, Dongguan, Guangdong, China

Tel: +86-769-81627526 | Website: www.dgkingpo.com | Email: sales@dgkingpo.com

Precision Metrology • Regulatory Compliance • Engineering Reliability