

IEC 61010-2-012 Figure 103

Scratching Tool

KINGPO KP-ST10 | Standard-specific carbide scratching tool for laboratory safety testing



Product Overview

The KINGPO KP-ST10 is a standard-specific scratching tool designed according to IEC 61010-2-012 Figure 103. It incorporates a hard-soldered K10 carbide tip and is intended for laboratory safety evaluations where the scratching-tool geometry specified by the standard is required.

Unlike a general-purpose scratch-hardness tester, the KP-ST10 provides the defined scratching element needed for the applicable IEC 61010 safety-test procedure.

APPLICABLE STANDARD

IEC 61010-2-012:2019, Figure 103

MODEL

KP-ST10

TIP MATERIAL

Hard-soldered carbide tip, K10

PRODUCT TYPE

Standard-specific scratching tool

Technical Specifications

Parameter	Specification
Product	Scratching Tool
Model	KP-ST10
Standard Reference	IEC 61010-2-012 Figure 103
Tip Construction	Hard-soldered carbide
Carbide Material	K10
Surface Roughness	1.6 µm (according to current KINGPO product data)
Figure Reference	Details of scratching tool tip - Figure 103
Brand	KINGPO

Engineering Note: Test force, scratching travel, scratch length, speed, number of scratches and subsequent pressure or leakage-test conditions are not stated in the currently published KP-ST10 product data. These parameters should be confirmed against the applicable standard clause and edition.

Standard Context & Tool Design

A focused view of where the Figure 103 tool fits within IEC 61010 laboratory safety evaluation.



Why the Scratching Procedure Matters

IEC 61010-2-012 addresses particular safety requirements for climatic and environmental testing equipment and other temperature-conditioning equipment. In relevant refrigerating-system safety evaluations, the standard may require a prescribed scratching condition to be applied before subsequent compliance checks.

The KP-ST10 should therefore be understood as a test-preparation and compliance tool. It creates the defined mechanical damage condition associated with the Figure 103 tool geometry; it does not independently determine whether the complete equipment passes or fails.

Important distinction: The KP-ST10 is not a general coating scratch-hardness tester. Its procurement value comes from matching a standard-specific IEC Figure reference rather than from providing a numerical material-hardness result.

Figure 103 Tool Design

Hard-Soldered K10 Carbide Tip	Current KINGPO product information identifies a hard-soldered K10 carbide tip. This is the working element used to create the prescribed scratching condition on the applicable test surface.
Figure-Specific Geometry	The KP-ST10 is intended for the scratching-tool tip geometry associated with IEC 61010-2-012 Figure 103. Confirm the project edition and exact test reference before quotation.
Surface Finish	The published product specification states a surface roughness of 1.6 µm. If traceable verification is required, the measurement parameter, location and documentation scope should be confirmed separately.

Relationship to IEC 61010 Part 2 Standards

IEC 61010-2-010	Particular requirements for laboratory equipment incorporating heating systems.
IEC 61010-2-011	Particular requirements for laboratory equipment incorporating refrigerating systems.
IEC 61010-2-012	Used where heating and refrigerating functions interact so that additional or more severe hazards arise, or where other environmental-treatment functions introduce additional hazards.

Laboratory Use & Procurement Guidance

Practical information for engineers, certification laboratories and purchasing teams preparing a quotation or test setup.

How the Scratching Tool Is Used

01	Identify the specified surface Confirm the component, surface or protective construction referenced by the applicable test clause.
02	Apply the prescribed scratching condition Use the Figure 103 tool in accordance with the test method and conditions specified by the applicable standard.
03	Continue the compliance evaluation Assess the scratched construction under the subsequent test conditions and acceptance criteria required by the project.

Typical Applications

- Product-safety laboratories - pre-compliance and formal IEC 61010 test setups.
- Certification / conformity-assessment laboratories - standard-specific safety evaluation.
- Environmental equipment manufacturers - internal verification of climatic and temperature-conditioning equipment.
- R&D; and quality teams - engineering checks before submission to an external laboratory.

Typical Test Objects

- Climatic and environmental test chambers
- Equipment combining heating and refrigeration functions
- Relevant temperature-conditioning equipment
- Refrigerating-system constructions referenced by the applicable safety procedure

What to Confirm Before Quotation

- Applicable standard and edition
- Relevant clause or Figure reference
- Equipment under test and test surface
- Tool only or additional fixture requirement
- Dimensional inspection or material-documentation needs

Why this information matters: Providing these details helps KINGPO review the intended IEC 61010 test reference and determine whether the KP-ST10 alone is suitable or whether additional support should be considered.

Configuration Boundary

The currently published KP-ST10 information describes the scratching tool itself. It does not establish that automatic force control, motorized travel, programmed scratch length, an integrated specimen fixture or pass/fail measurement is included. If the project requires a controlled or automated setup, those requirements should be specified separately.

Procurement note: Select the tool by the applicable standard requirement and test setup, not by model number alone.

FAQ, Documentation & Technical Support

Concise answers to common engineering and purchasing questions about the KP-ST10 Figure 103 scratching tool.

1. What is the KP-ST10 used for?

It provides the standard-specific scratching element associated with IEC 61010-2-012 Figure 103 for the applicable laboratory safety procedure. It is not intended as a general scratch-hardness tester.

2. Is the KP-ST10 a complete automatic test machine?

No automatic force control, motorized travel or integrated pass/fail system is specified in the current product information. Additional fixtures should be confirmed separately if required.

3. What material is used for the tip?

Current KINGPO product data identifies a hard-soldered K10 carbide tip. Material documentation requirements should be stated during quotation.

4. What does the 1.6 μm value mean?

It is listed as surface roughness in current KINGPO product information. The measurement parameter and exact surface are not identified in the public data, so traceable verification should be confirmed separately.

5. Can it be used for IEC 61010-2-011?

IEC 61010-2-011 also includes a Figure 103 scratching-tool reference, but suitability should be checked against the exact edition and drawing before assuming interchangeability.

6. Does the tool determine pass or fail?

No. The tool creates the prescribed scratching condition. Final conformity depends on the complete test procedure, acceptance criteria and laboratory execution.

7. What should be provided for quotation?

Provide the applicable standard, edition, clause / Figure reference, equipment under test, test surface and any fixture or documentation requirements.

8. Who typically purchases this tool?

Typical users include product-safety laboratories, certification organizations, environmental equipment manufacturers and internal R&D; or compliance departments.

Documentation & Compliance Statement

The KP-ST10 is designed for use with the scratching-tool requirements associated with IEC 61010-2-012 Figure 103. Compliance of the equipment under test depends on the applicable standard edition, complete procedure, equipment configuration and laboratory execution; the scratching tool itself should not be interpreted as providing product certification or automatic compliance.

Where required, dimensional inspection records, material information or other project-specific technical documentation can be discussed according to the confirmed product configuration and quotation scope.

TECHNICAL INQUIRY & CONFIGURATION SUPPORT

For a technical review, send the applicable IEC 61010 standard and edition, clause / Figure reference, equipment under test and required documentation. KINGPO can review whether the KP-ST10 scratching tool alone is appropriate or whether additional fixture support should be considered.

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Specifications and documentation availability should be confirmed at the time of quotation. This datasheet is intended as a product-information document and does not reproduce the full text of IEC 61010-2-012.