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KK01/02/03

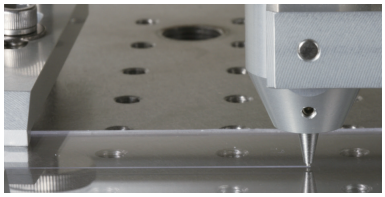
Scratch Tester

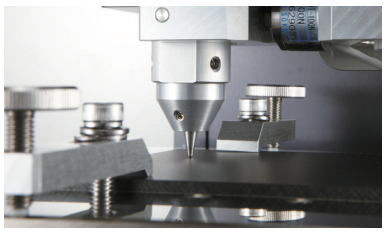
The KK01 Scratch Tester and the KK02, KK03 Scratch Tester for low loads use a rigid pin to scratch such targets as film, plastic, automotive interior and exterior material, and coating material to evaluate the target's scratch resistance (scratch characteristics).

Standardized increased load scratch testing can be conducted in accordance with ASTM and ISO* guidelines. This testing allows for the utilization of coating material research and flaw occurrence mechanism analysis, enabling quantitative assessment of scratch characteristics.

KK01 : Configurable load 1 to 200N

KK02 : Configurable load 1 to 50N
KK03 : Configurable load 0.1 to 5N





FEATURES

● Calculation of scratch coefficient of friction

This device is capable of calculating scratch frictional coefficient, a physical quantity directly related to surface damage, which facilitates clarifying the structure of a scratch.

● Teaching function

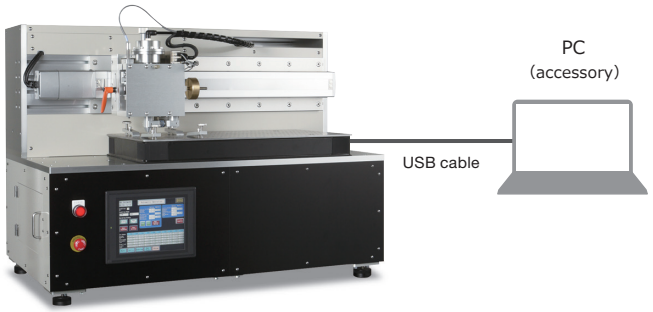
This feature can be used to perform initial configured testing and ultimate load indentation testing. Performing these tests prior to actual testing allows the load range to be set quickly.

● Suspension function

Even for samples with an uneven surface that make scratch evaluation difficult, such as textured surfaces, this feature makes testing possible without compromising linear load increase capabilities.

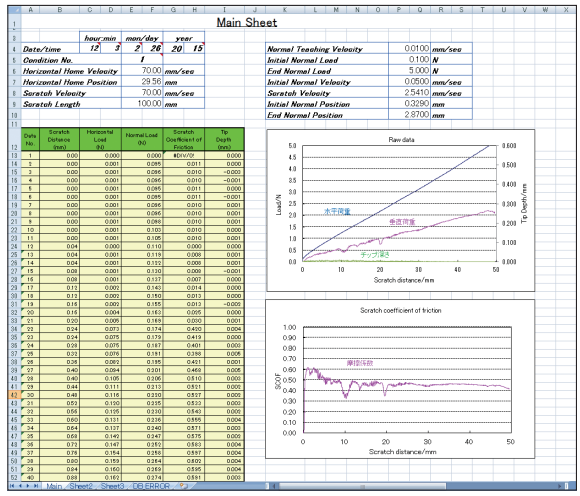
SYSTEM CONFIGURATION DIAGRAM / MEASUREMENT DATA

e.g. **KK01**



*Same for KK02/03

Sample Measurement Software Screens

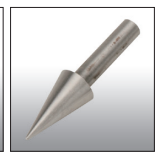


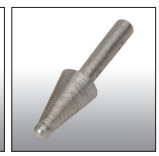
TIP LINEUP

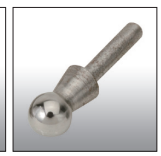
To handle a wide variety of evaluations with varying types of damage (gloss scratches, scaly scratches, cutting damage, etc.), We offer a variety of tips in addition to the standard ϕ 1 mm tip. We also offer tip customization to meet customer testing requirements.

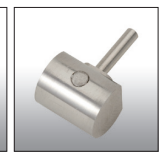
*Only ϕ1 mm tips are ASTM- and ISO-compliant.


ϕ1mm (standard)


ϕ0.5mm


ϕ2mm


ϕ5mm


Barrel tip

KK01/02/03 Scratch Tester

Dimensions/Weight (approx.)	KK01 : W965 × D530 × H690 (mm) / 150 kg KK02/03 : W545 × D455 × H680 (mm) / 65 kg
Power source	100 VAC, power consumption: 60W Max.
Measurement environment temperature and humidity	10 to 40°C / 30 to 70% RH (No condensation.) *The instrument should be located to minimize influence from wind or vibrations.
Measurement operation	Measuring method: Increased load type Scratch direction: From left to right
Scratch load detection	Detector: Load cell Vertical load: (KK01) 1 to 200 N (KK02) 1 to 50 N (KK03) 0.1 to 5 N Horizontal load (max.): (KK01) 200 N (KK02) 50 N (KK03) 5 N Accuracy (full scale): ±0.5 or less
Scratch distance detection	Detector: Linear encode Distance (max.): (KK01) 400mm (KK02/03) 200mm
Scratch rate	(KK01) 1 mm/sec to 400mm/sec (KK02/03) 1 mm/sec to 200mm/sec
Depth detection	Detector: Laser displacement meter
Data communication	Data transfer: USB No. of measurement result points: Approx. 1000
Sample size	(KK01) Dimensions: 200 × 420 mm, Thickness: 5 mm (max.) (KK02/03) Dimensions: 60 × 220 mm, Thickness: 5 mm (max.)

*ASTM: D7027-05 / ISO: 19252

This device is manufactured and sold under license by Kato Tech Co., Ltd., from U.S. Surface Machine Systems, LLC. (Patent No. 7302831).

⚠ Precaution For safety use, please read the operation manual / the instruction carefully and throughly before using the tester.

Specification details recorded here are subject to change without notice. We appreciate your understanding.

KatōTech **KATO TECH CO.,LTD.**