

# 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

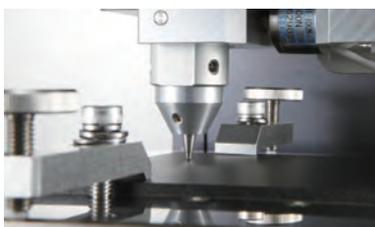
This device is capable of calculating scratch frictional coefficient, a physical quantity directly related to surface damage, which facilitates clarifying the structure of a scratch.

### ● 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.

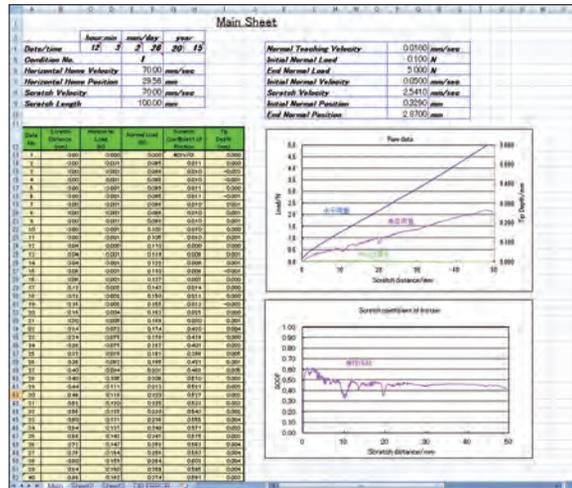


**SYSTEM CONFIGURATION DIAGRAM / MEASUREMENT DATA**



\*Same for KK02/03

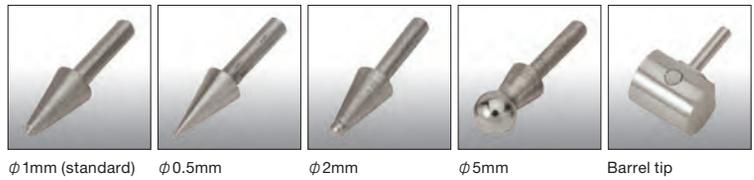
**Sample Measurement Software Screens**



**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  $\phi$  1 mm tip. We also offer tip customization to meet customer testing requirements.

\*Only  $\phi$  1 mm tips are ASTM- and ISO-compliant.



**KK01/02/03 Scratch Tester**

<b>Dimensions/Weight (approx.)</b>	KK01 : W965 x D530 x H690 (mm) / 150 kg KK02/03 : W545 x D455 x H680 (mm) / 65 kg
<b>Power source</b>	100 VAC, power consumption: 60W Max.
<b>Measurement environment temperature and humidity</b>	10 to 40°C / 30 to 70% RH (No condensation.) *The instrument should be located to minimize influence from wind or vibrations.
<b>Measurement operation</b>	Measuring method: Increased load type Scratch direction: From left to right
<b>Scratch load detection</b>	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): $\pm 0.5$ or less

<b>Scratch distance detection</b>	Detector: Linear encode Distance (max.): (KK01) 400mm (KK02/03) 200mm
<b>Scratch rate</b>	(KK01) 1 mm/sec to 400mm/sec (KK02/03) 1 mm/sec to 200mm/sec
<b>Depth detection</b>	Detector: Laser displacement meter
<b>Data communication</b>	Data transfer: USB No. of measurement result points: Approx. 1000
<b>Sample size</b>	(KK01) Dimensions: 200 x 420 mm, Thickness: 5 mm (max.) (KK02/03) Dimensions: 60 x 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).

**⚠ Caution** For safety use, please read the operation manual / the instruction carefully and thoroughly before using the tester.

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