

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

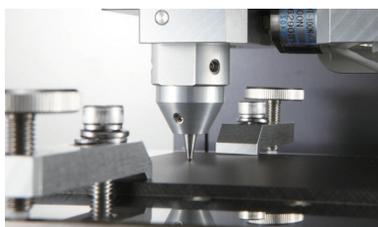
This device is capable of calculating scratch frictional coefficient, a physical quantity directly related to surface damage, which facilitates clarifying the structure of a scratch.

● 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

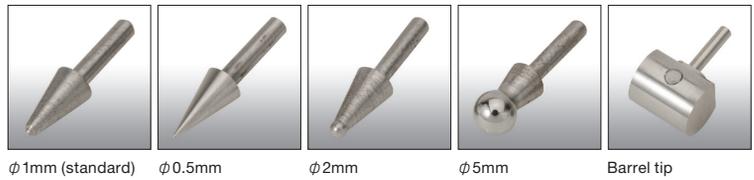
Main Sheet			
hour:min	mm/day	year	
12	2	20	12
Condition No.	1		
Horizontal Home Velocity	70.00	mm/Sec	
Horizontal Home Position	29.95	mm	
Scratch Velocity	70.00	mm/Sec	
Scratch Length	100.00	mm	

Normal Teaching Velocity	0.0100	mm/Sec
Initial Normal Load	0.100	N
End Normal Load	5.000	N
Initial Normal Velocity	0.0500	mm/Sec
Scratch Velocity	2.5410	mm/Sec
Initial Normal Position	0.3250	mm
End Normal Position	2.8700	mm

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 ϕ 1 mm tips are ASTM- and ISO-compliant.



KK01/02/03 Scratch Tester

Dimensions/Weight (approx.)	KK01 : W965 × D530 × H690 (mm) / 150 kg KK02/03 : W545 × D455 × H680 (mm) / 65 kg	Scratch distance detection	Detector: Linear encode Distance (max.): (KK01) 400mm (KK02/03) 200mm
Power source	100 VAC, power consumption: 60W Max.	Scratch rate	(KK01) 1 mm/sec to 400mm/sec (KK02/03) 1 mm/sec to 200mm/sec
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.	Depth detection	Detector: Laser displacement meter
Measurement operation	Measuring method: Increased load type Scratch direction: From left to right	Data communication	Data transfer: USB No. of measurement result points: Approx. 1000
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): ± 1 or less	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).

⚠ 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.



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