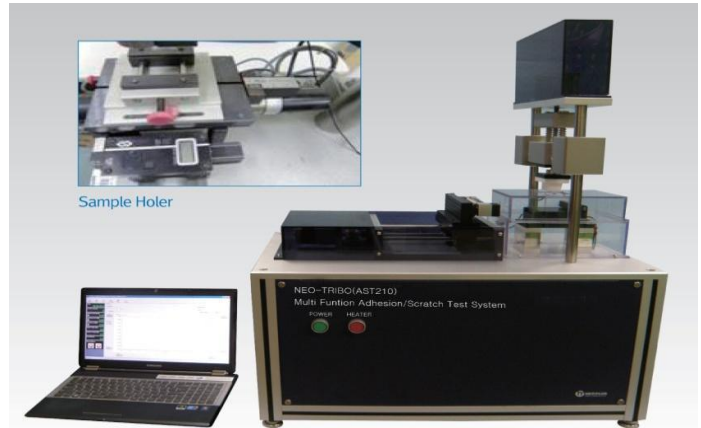


# Multi-Function Adhesion/Scratch Test System – AST210

## ◆ General Information

In the ultra-precision industry of metallic materials and semi-conductors, surface treatment technology is an essential component of protecting and strengthening the surface layer. The performance of thin film coating is largely influenced by the properties of the thin film layer and its adhesiveness to the base material.

The **AST210** System using sound wave technology, measures the coating layer's adhesiveness to the base metal as well as the surface frictional force of the thin film.



## ◆ Control Parameters

- Frequency Module
- Load
- Test Duration
- Temperature

## ◆ Recorded Parameters

- Load (N)
- Friction Force (N)
- Friction Coefficient ( $\mu$ )
- Sliding Distance (m/sec)
- Test Duration
- Temperature ( $^{\circ}$ )
- Electrical Contact Resistance

## ◆ Load Measurement System

- Transducer: Precision Load Cell (Dual Sensor)
- Amplifier: Precision Strain Gauge Module

## ◆ Acoustic Emission

- Measurement System
- AE Detector: 200 kHz
- AE Preamplifier
- Octave Bandwidth Filter: 200 kHz
- Amplification: 40 dB
- AE amplifier
  - Large Bandwidth Amplifier: 50 – 400 kHz
  - Amplification: 0 – 20 dB
- AE Signal Converter

## ◆ Specifications

<b>Multi-Function Tests</b>	- Peel off - Shear - Full off
<b>Power Supply</b>	AC 220 V, 50/60 Hz
<b>Translational Table Speed</b>	- Range: $2 < dy/dt < 35$ mm/min - Calibrated value : $10 \pm 0.1$ mm/min AISI 1020
<b>Loading Rate</b>	- Range: $20 < dz/dt < 400$ N/min - Calibrated value: $100 \pm 1$ N/min
<b>Normal Force</b>	Range: 1 to 200 N (adjustable)
<b>Multi-Axis Testing</b>	- X, Y, and Z - Up to 4 axis <ul style="list-style-type: none"> <li>- X is manual (max. displacement range 120 mm)</li> <li>- Y is motorized (max. displacement range 75 mm)</li> <li>- X is in the direction of the scratch</li> <li>- Y is perpendicular to the direction of the scratch</li> </ul>
<b>Standard Sample Holder</b>	W 49 mm × D 35 mm
<b>Dimensions</b>	W 480 × D 530 × H 550 mm
<b>Weight</b>	≈ 70 kg