FUTURE-TECH

VICKERS HARDNESS TESTER AUTOMATION SYSTEM

# FT-ZERO Series

**Controlled by high performanace software FT-ZERO**

- By combining with Hardness Tester, stage control is automated in indent/ multi-pointmeasurement to reduce the dispersion caused by each operator.
- This system is very effective for large-scale rationalization and energy saving.



## Features

### High resolution camera (Common to each model)

- Equipped with a 1.3M pixel high resolution digital camera.

### Image processing software (Common to each model)

- Capability of reading unclear indents on un-mirror surface has been improved by more advanced image processing software.

### Measurement image saving function (Common to each model)

- Measured indentation image can be checked quickly. Easily and quickly edit the data by re-measuring the saved image.

### Various data output format and statistical processing (Common to each model)

- For the measuring of carburizing / induction hardening, the selected hardness case depth shall be displayed and recorded on the chart once the multiple measuring is completed.
- Multiple measuring data, Hardness chart, Case depth, Max. value, Min. value, Mean value, Dispersion, Standard deviation, OK-NG criteria, Conversion data etc··· various data output shall be available.
- Display and output of color profile picture linked with hardness values are standard function.
- Excel data transfer function. Test result shall be exported to the original report Form.

### Motorized XY stage (ARS・ARS-F)

- It is possible to move the stage to the center by double clicking and move the stage finely by dragging. Easy to align the sample's original position and it can drastically shorten the setting time.

### Various measuring pattern (ARS・ARS-F)

- Fully automated test cycle (indent, measuring, recoding data) by selecting measuring pattern.
- Random measuring combined with sample profiling function, and measuring function which traces edge of sample as standard feature

### Function which traces edge of sample as standard feature (ARS・ARS-F)

- Straight・Zigzag・Circle・Arc・Line Set・Random・Matrix・Teaching etc··· We will meet users' needs.

### Sample surface inclination/slope correction function (ARS-F)

- Z axis shall be controlled along with surface inclination by selecting 3 positions' angle setting. This function is to improve the accuracy of load apply and measurement position. Moreover to shorten the auto focus time, and a safety limiter prevents contact between the sample and the lens or indenter.

VICKERS HARDNESS TESTER AUTOMATION SYSTEM

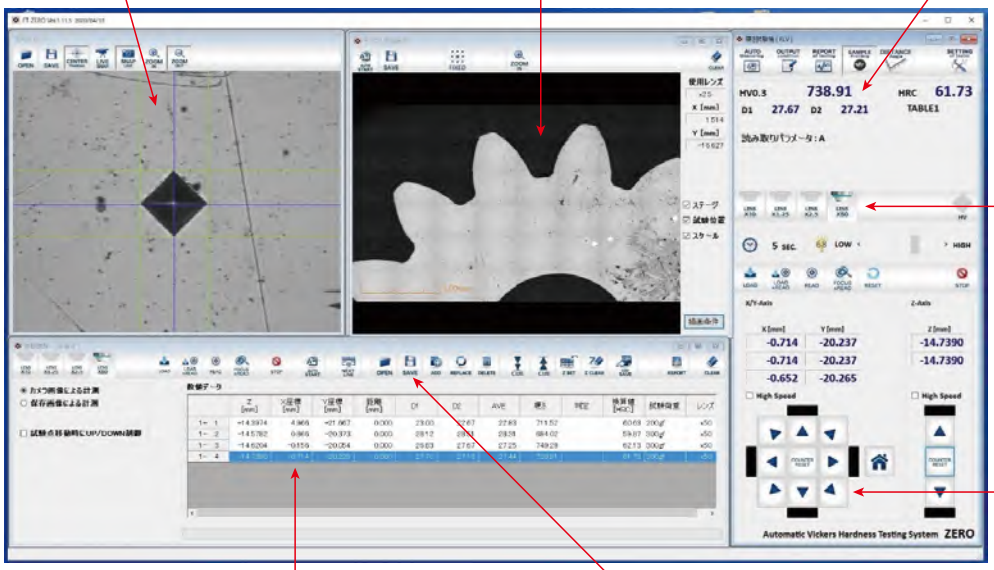
# FT-ZERO Series

## ～Software FT-ZERO Function Introduction～

The observation position is displayed with high image quality. The measurement line position can be easily fine-tuned using a mouse.（Common to each model）

Display the entire sample recognized by sample profiling. Easily move the observation position by simply clicking on the desired position.（ARS・ARS-F）

Display measurement data in real time. The converted value to the desired scale can be displayed at the same time.（Common to each model）



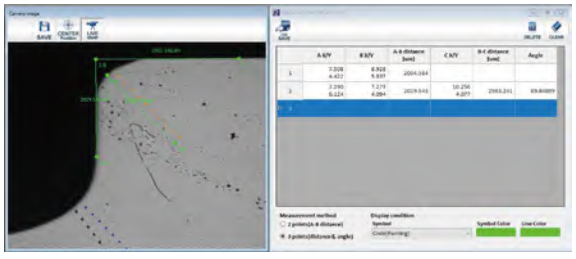

You can switch to the desired lens/indenter axis by clicking the icon.（Common to each model）

Moving operation of motorized stage.（ARS・ARS-F）

Display multiple test results.（Common to each model）

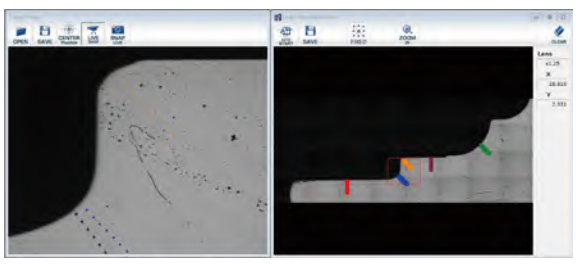
Automatically start, stop, re-measure, save data, recall, replace etc. easily by clicking icons.（Common to each model）

## ■DISTANCE &ANGLE MEASUREMENT FUNCTION



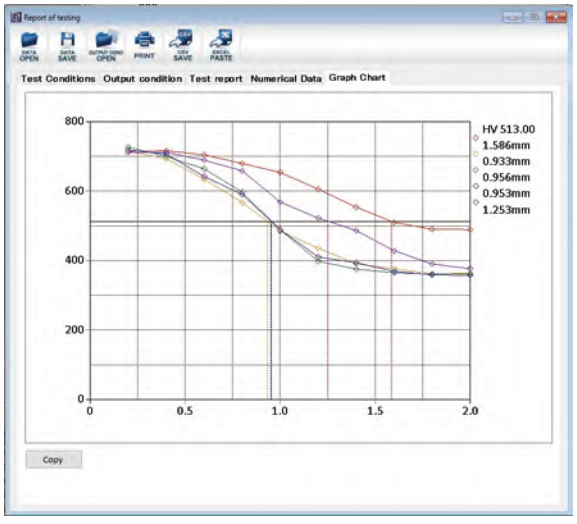
Only click between two points can measure the distance and click three points can measure the angle easy.（ARS・ARS-F）

## ■IMAGE OF PROFILING FUNCTION



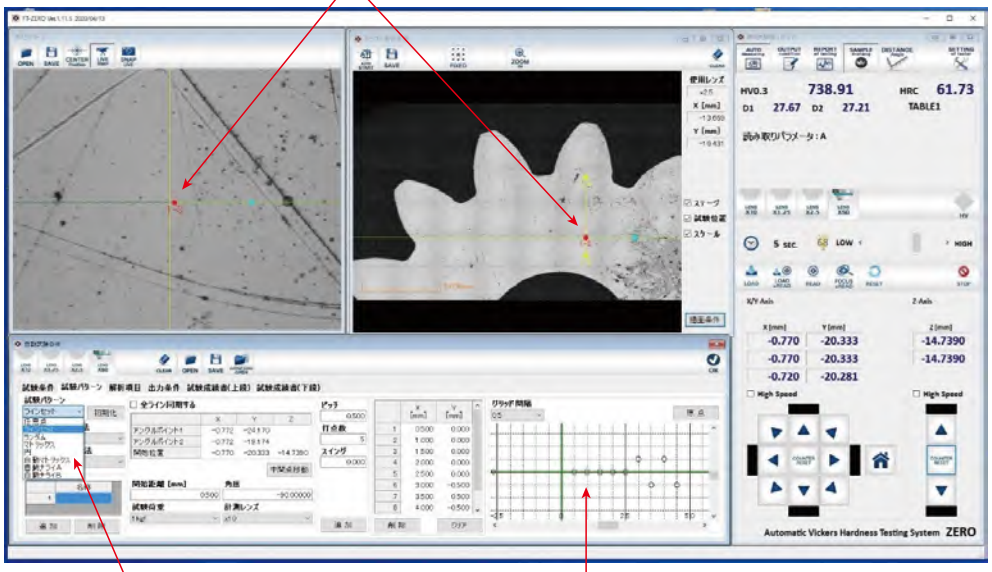
The original position set is very simple by this function to recognize a shape of sample automatically.（ARS・ARS-F）

## ■REPORT GRAPH CHART



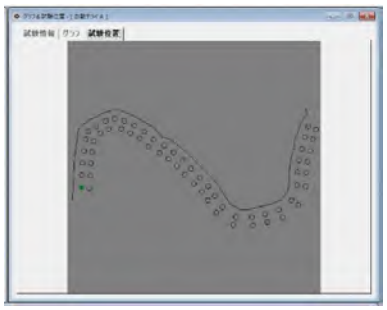

Measurement data can save it in CSV form and transfer it to an original report.（Common to each model）

The test starting position and direction of various patterns can be easily set and changed by simply clicking on an arbitrary position on the image. (ARS・ARS-F)

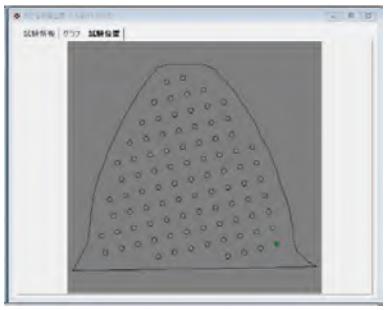



Various test patterns can be selected.
Line setting, Random, Matrix, Circle, Automatic end face tracing and etc.
(ARS・ARS-F)

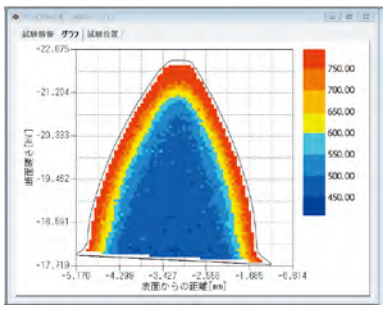
Complex pattern settings are possible just by clicking the graph.
It is possible to set and save the measurement conditions such as loading and measurement lens for each line together with the measurement pattern.
Measurement conditions are automatically changed by simply calling a pattern from the list. (ARS・ARS-F)



Test pattern: Automatic end face tracing
(ARS・ARS-F)



Test pattern: matrix（ARS・ARS-F）



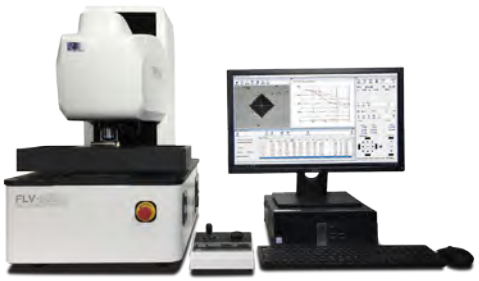

Color conversion data display example
(ARS・ARS-F)

## FT-ZERO installed system lineup introduction

### AUTOMATIC INDENTATION MEASUREMENT /AUTOMATIC X-Y STAGE / AUTOMATIC FOCUS SYSTEM(FULLY-AUTOMATIC MEASURING SYSTEM)

# ARS-F

By adopting automatic indentation measurement, automatic stage, and automatic focus system, highly accurate automatic measurement is possible in a wide variety of patterns.
All steps of indentation formation, focus adjustment, and indentation measurement after the sample set are performed unattended.



FLV-50ARS-F



FM-810ARS-F

## AUTOMATIC INDENTATION MEASUREMENT / AUTOMATIC X-Y STAGE SYSTEM

# ARS

By adopting automatic indentation measurement and automatic stage system, it is possible to reduce the reading error and individual error by the operator. Achieved a significant reduction in work time.



FM-810ARS

## AUTOMATIC INDENTATION MEASURING SYSTEM

# AR

By adopting an automatic indentation measurement system, it is possible to reduce reading errors and individual errors by workers. Achieved a reduction in work time.



FLV-50AR



FM-810AR

## SPECIFICATIONS

| | | |
|---|---|---|
| SYSTEM CONFIGURATION | | **(Common to each model)**<br>exclusive control and data processing software (FT-ZERO), 1.3M pixel camera, camera attachment, PC, 23-inch LC monitor, connecting cable,<br>**(ARS・ARS-F)**<br>Automatic X-Y Stage, control box<br>**(ARS-F)**<br>Joy-Stick controller, sample contact accident prevention safety mechanism |
| MIN, MEASUREMENT UNIT | | 0.1 μm |
| MEASUREMENT SCALE | | HV (Vickers), HK (Knoop) |
| REPEATABLITY | | ±0.5% / approx. HV500 Load:500gf |
| AUTOMATIC X-Y STAGE (ARS・ARS-F) | FM・FV SERIES | (DIMENSIONS) 110mm ×110mm (MOVEMENT) MAX：X50mm × Y50mm / MIN：1 μm |
| | FLV SERIES | (DIMENSIONS) 150mm ×150mm (MOVEMENT) MAX：X180mm × Y110mm / MIN：1 μm |
| MIN, READ INDENTATION DIAMETER | | 16 μm |
| DATA PROCESSING | | Graph display, color conversion data, maximum value, minimum value, average, conversion, hardened layer depth, etc. |

**Applicable models** ——— ●FM-110 ●FM-310 ●FM-810 ／ ●FV-110 ●FV-310 ●FV-810 ／ ●FLV-10 ●FLV-50

※FLV series is available only for AR and ARS-F. ARS is not possible.

※Appearance and specifications are subject to change without prior notice for the product improvement.

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JCSS 0228

We are based on JIS Q 17025 (ISO/IEC 17025) as accredited standards, and accredited by JCSS who manages the recognition scheme according to ISO/IEC 17011. IA Japan (accreditation organization who has managed JCSS) who is signatory to the Mutual Recognition Arrangement (MRA) of International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Accreditation Cooperation (APAC).
We are accredited as MRA Calibration Laboratory of JCSS. Our accreditation number is JCSS 0228.

No.1172・ISO 9001

MS CM002


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