

# MICROHARDNESS TESTER/VICKERS HARDNESS TESTER: AUTOMATION SYSTEM

By combining this system with the hardness tester, it is possible to automate the indentation measurement and the stage control in multi-point measurement. This system is very effective to reduce the dispersion caused by errors of the workers and to realize rationalization and energy saving.

## Automatic indentation measuring system

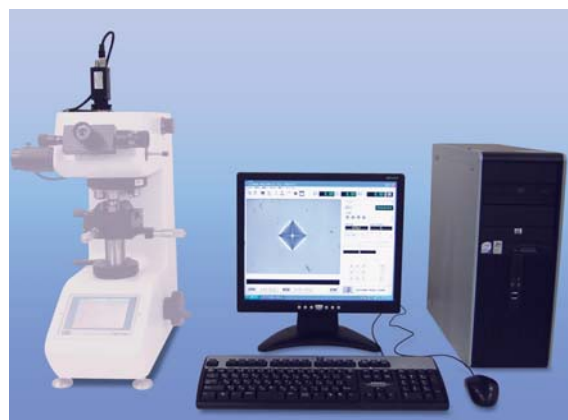
### AR90



### Indentation measurement is automated!

Light-and-dark image processing protects this system against the influence of metals or damage. Automatic measurement can be done with high accurate repeatability exceeding any skilled technician.

System configuration	CCD camera, CCD camera attachment, personal computer, printer, 17-inch LC monitor, image board, connecting cable, exclusive control, and data processing software
Min. measurement unit	0.1 $\mu\text{m}$
Measurement scale	HV (Vickers), HK (Knoop)
Measuring method	Light-and-dark image processing system
Repeatability	$\pm 0.5\%$ / approx. HV500 Load: 500gf
Manual measurement	Video line system
Automatic reading time	Approx. 0.3 sec / 1 indentation
Min. read indentation diameter	10 $\mu\text{m}$ (diagonal length)
Data processing	Graph display, color conversion data, maximum value, minimum value, average, conversion, hardened layer depth, etc.



#### Applicable models

- FM-100    ● FM-100e    ● FM-300    ● FM-300e
- FM-700    ● FM-700e    ● FV-100    ● FV-100e
- FV-300    ● FV-300e    ● FV-700    ● FV-700e
- DVK-1    ● DVK-2    ● MXT-30    ● MXT-70    etc.

## Automatic X-Y stage system

### AS90



### Stage control is automated!

In complicated multi-point measurement, stage movement is automated when an indentation is made and read.

System configuration	Automatic X-Y stage, control box, personal computer, printer, 17-inch LC monitor, connecting cable, exclusive control, and data processing software
Measurement scale	HV (Vickers), HK (Knoop)
Measuring method	Manual (with eyepiece)
Indentation measurement	Electronic measuring microscope
Min. measurement unit	0.01 $\mu\text{m}$ (FM/FV series: x50 lens or more)
Stage dimension	110 x 110
Stage movement	X50 x Y50
Min. stage movement unit	1 $\mu\text{m}$
Data processing	Graph display, color conversion data, maximum value, minimum value, average, conversion, hardened layer depth, etc.

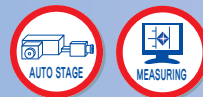


#### Applicable models

- FM-300    ● FM-300e    ● FM-700    ● FM-700e
- FV-300    ● FV-300e    ● FV-700    ● FV-700e
- DVK-1    ● DVK-2    ● MXT-30    ● MXT-70    etc.

## Automatic X-Y stage PC monitor measuring system

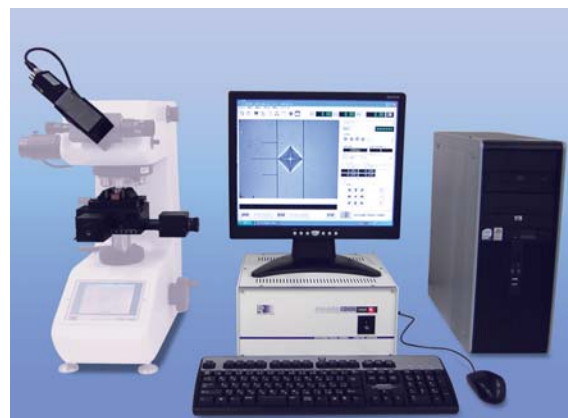
# ASV90



### Stage control is automated!

In complicated multi-point measurement, stage movement is automated when an indentation is made and read. It is possible to measure an indentation enlarged on the PC (personal computer) monitor!

System configuration	CCD camera, L-type CCD camera attachment, automatic X-Y stage, control box, personal computer, printer, 17-inch LC monitor, image board, connecting cable, exclusive control, and data processing software
Measurement scale	HV (Vickers), HK (Knoop)
Measuring method	Manual (with PC monitor)
Indentation measurement	Electronic measuring microscope
Min. measurement unit	0.01 $\mu\text{m}$ (FM/FV series: x50 lens or more)
Stage dimension	110 x 110
Stage movement	X50 x Y50
Min. stage movement unit	1 $\mu\text{m}$
Data processing	Graph display, color conversion data, maximum value, minimum value, average, conversion, hardened layer depth, etc.



#### Applicable models

FM-300 FM-300e FM-700 FM-700e  
 FV-300 FV-300e FV-700 FV-700e  
 DVK-1 DVK-2 MXT-30 MXT-70 etc.

## Automatic indentation measurement/Automatic X-Y stage system

# ARS900



### Indentation measurement is automated! Stage control is automated!

Light-and-dark image processing realizes the automation of indentation measurement and stage movement!

System configuration	CCD camera, CCD camera attachment, automatic X-Y stage, control box, personal computer, printer, 17-inch LC monitor, image board, connecting cable, exclusive control, and data processing software
Min. measurement unit	0.1 $\mu\text{m}$
Measurement scale	HV (Vickers) / HK (Knoop)
Measuring method	Light-and-dark image processing system
Repeatability	$\pm 0.5\%$ / approx. HV500 Load: 500gf
Manual measurement	Video line system
Automatic reading time	Approx. 0.3 sec / 1 indentation
Min. read indentation diameter	10 $\mu\text{m}$ (diagonal length)
Stage dimension	110 x 110
Stage movement	X50 x Y50
Min. stage movement unit	1 $\mu\text{m}$
Data processing	Graph display, color conversion data, maximum value, minimum value, average, conversion, hardened layer depth, etc.



#### Applicable models

FM-300 FM-300e FM-700 FM-700e  
 FV-300 FV-300e FV-700 FV-700e  
 DVK-1 DVK-2 MXT-30 MXT-70 etc.



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