

FULLY-AUTOMATIC MICROHARDNESS TESTING SYSTEM

FM-ARS 9000

AUTO-STAGE

AUTO-FOCUS

AUTO-READING



CE



FUTURE-TECH CORP.

FULLY-AUTOMATIC
MICROHARDNESS TESTING SYSTEM

FM-ARS 9000

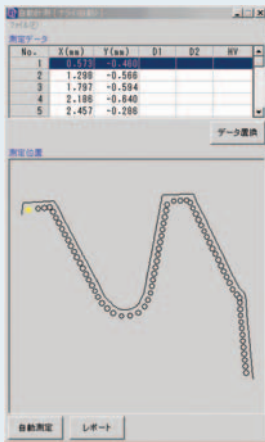
FULLY-AUTOMATIC
VICKERS HARDNESS TESTING SYSTEM

FV-ARS 9000

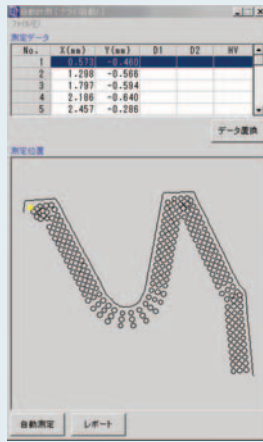
More Innovated Micro/ Macro Vickers Hardness Testing System

Most Advanced System with High-speed Sample Profile Memory Function.
High-speed, High-accuracy, High-repeatability, Easy-operation, Improved Read Power.
More Reliable for Large quantities of testing without human error.

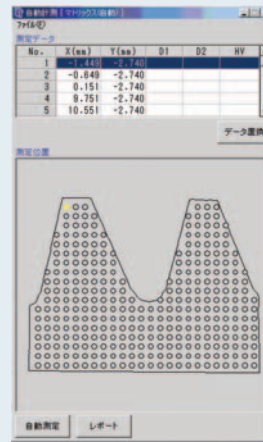
- ◆ A series of measurement operations : Continuous Indentation~Focusing~Reading~Data Record :Just by selecting a measurement pattern, all testing will be fully-automatic with high speed.
- ◆ Various Measurement Patterns...
 - *Intelligent Sample Profile Memory Function allows complicated Random measurements or Teaching Measurement along with the edge of specimen – Standard Function
 - *Various Patterns can meet customers' requirements : Straight Line / Zigzag / Circle /Arc / Line Set / Random / Matrix / Teaching / etc.



Teaching Pattern :
1 Line

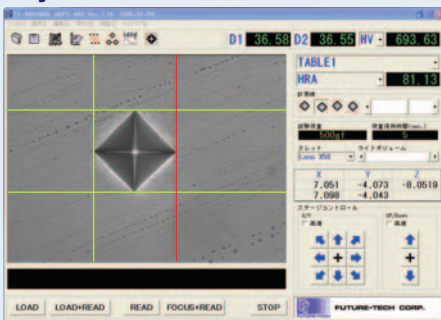


Teaching Pattern :
3 Lines

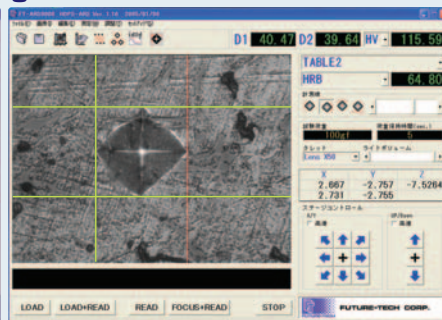


MatrixPattern

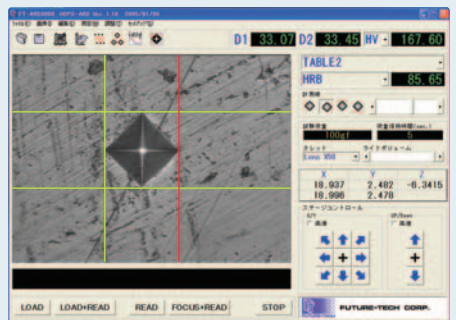
- ◆ Capability of Reading unclear Indents on un-mirror surface has been improved by more advanced Data Processing Software



Mirror Surface

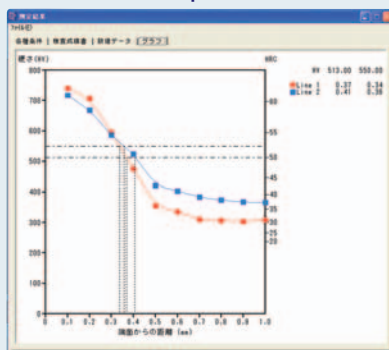


Etched Surface



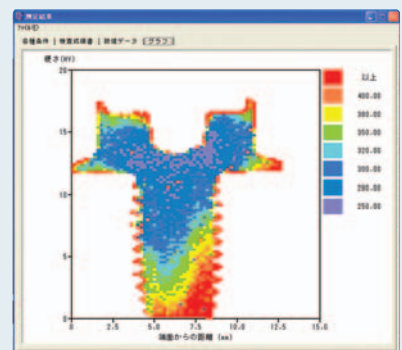
Scratched Surface

- ◆ Various Data Output Format and Statistical Processing...



Display for Case Depth

Display for Measurement Data



Display for Color Profile Picture linked with Hardness Values on Matrix Test Pattern

- * Case Depth of indicated HV Hardness can be displayed instantaneously on the Chart after continuous Measurements on Carbonized Layer.
- * Various Data Output available – Measurement Data, Hardness Distribution Chart, Case Depth, Max. Value, Min. Value, Mean Value, Dispersion, Standard Deviation, Coefficient of Variation, OK-NG Criteria, Conversion Data, etc.
- * Display and Output Color Profile Picture linked with Hardness Values – Standard Function

[SPECIFICATIONS]

ITEM	FULLY-AUTOMATIC MICROHARDNESS TESTING SYSTEM FM-ARS 9000	FULLY-AUTOMATIC VICKERS HARDNESS TESTING SYSTEM FV-ARS 9000	
STANDARD SYSTEM COMPONENT	Analog Microhardness Tester Model: FM-100S (OPTION: FM-300S, FM-800S available)		
	Analog Vickers Hardness Tester Model: FV-100S (OPTION: FV-300S, FV-800S available)		
	Automatic X-Y Stage & Motor Drive Unit		
	CCD Camera		
	Complete set of PC: 17"Color CRT, Mouse, Keyboard, and Joy-Stick with Controller		
	Standard Software for System ARS 9000		
MICRO HARDNESS TESTER	Ink-Jet Type Color Printer		
	PC: DELL or IBM Compatible Model with OS Windows XP		
	MODEL	Model FM-100S: Stage Elevation Motor Built-in	Model FV-100S: Stage Elevation Motor Built-in
	TYPE	Analog Type: Controllable Loading Operation by External PC	
	TEST LOAD	A: mN: 98.07, 245.2, 490.3, 980.7, 1961, 2942, 4903, 9807 gf: 10, 25, 50, 100, 200, 300, 500, 1000	A: N: 9.807, 19.61, 29.42, 49.03, 98.07, 196.1, 294.2, 490.3 kgf: 1, 2, 3, 5, 10, 20, 30, 50
		B: mN: 49.03, 98.07, 245.2, 490.3, 980.7, 1961, 2942, 4903 gf: 5, 10, 25, 50, 100, 200, 300, 500	B: N: 2.942, 4.903, 9.807, 29.42, 49.03, 98.07, 196.1, 294.2 kgf: 0.3, 0.5, 1, 3, 5, 10, 20, 30
		C: mN: 245.2, 490.3, 980.7, 1961, 2942, 4903, 9807, 19614 gf: 25, 50, 100, 200, 300, 500, 1000, 2000	
		D: mN: 9.807, 49.03, 98.07, 490.3, 980.7, 2942, 4903, 9807 gf: 1, 5, 10, 50, 100, 300, 500, 1000	
	LOADING MECHANISM	Automatic Load/Hold/Release Method	
	FOCUS OPERATION	Automatic / Manual Operation available * Focusing Steps adjustable	
	AUTO-STAGE ELEVATION	Automatic: by Built-in Stepping Motor Manual: FM: by Standard Handle & Joy-Stick Operation / FV: by Joy-Stick Operation * Safety Devices equipped to Overrun of Elevation.	
	PRECISION VISE	Standard: Max. Opening: 50mm	
	TURRET ROTATION LOAD	Automatic / Manual changeable	
	APPLYING SPEED	Initial Speed: 120 μ m/sec / Actual Loading Speed: 60 μ m/sec	
	DWELL TIME	5 – 40sec	
	MANUAL OCCULAR	(OPTION: Analog Type)	
	MANUAL MEASUREMENT	By Video Line on CRT available	
	OBJECT LENS	X10 / X50 (Optical Parts for 3rd Lens Built-in)	X10 / X20 (Optical Parts for 3rd Lens Built-in)
	AUTOMATIC MEASUREMENT SCALE	Vickers Hardness (HV) / Knoop Hardness (HK)	
AUTOMATIC X-Y STAGE	DRIVING MOTOR		
	Stepping Motor		
	DRIVE CONTROL		
	By Aicon: 2 Steps Speed available in X·Y·Z axis		
	METHOD		
	By Joy-Stick: Flexible Speed Changing in X·Y·Z axis		
	DIMENSIONS		
	110 x 110mm		
	MAX. MOVEMENT		
	50 x 50mm in X·Y axis		
MIN. MOVEMENT			
1 μ m			
MOVING SPEED			
1 – 25mm/sec adjustable			
MOVEMENT PROGRAM PATTERN			
Straight Line (Horizontal & Vertical) / Zigzag / Circle / Arc / Line Set for any Angle (8 Lines and Max. 3000 Indents on 1 Line) / Random / Teaching / Matrix / Specificity of 2 Points / Specificity of Angle Sample Profile Memory Function & Measurement along with Profile Line			
PATTERN SETTING			
Start Position Setting for Straight Line and Position Setting for Random/Teaching Mode shall be performed by Mouse-Click			
SOFTWARE			
OS: Microsoft Windows XP			
AVAILABLE HARDNESS SCALE			
Vickers (HV) / Knoop (HK)			
MEASUREMENT REPEATABILITY			
\pm 0.8% on Test Block 700HV/500gf		\pm 0.8% on Test Block 800HV/10kgf	
AUTO-FOCUS TIME			
Shortest 3 sec			
AUTO READING TIME			
Approx. 0.2 sec/1 Indent			
MEASURABLE MIN. INDENT			
5 μ m			
MIN. MEASUREMENT UNIT			
0.1 μ m			
MANUAL MEASUREMENT			
By OPTIONAL Occular or Video Line on CRT			
AVAILABLE LANGUAGES SUPPORT			
Japanese / English			
DATA OUTPUT FORMAT & EDITTING FUNCTION			
Hardness Value, Hardness Chart, Case Depth, Insertion of Picture, etc. and Flexible Data Editing on "EXCEL"			
PRINTER			
Standard: Color Ink-Jet Type			
JOY-STICK			
For X·Y·Z axis Movement / Standard: Digital Type			
MANUAL OCCULAR			
OPTION: Analog Type			
SAFETY DEVICE			
Safety Devices equipped for Unmanned Operation * Turret Rotation stop instantaneously in case of Object Lens or Indenter hit a Specimen. * Upper & Lower Limit Stopper are equipped against Uncontrollable Stage Elevation			

[STANDARD ACCESSORIES]

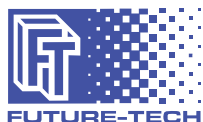
MODEL	FULLY-AUTOMATIC MICROHARDNESS TESTING SYSTEM FM-ARS 9000			FULLY-AUTOMATIC VICKERS HARDNESS TESTING SYSTEM FV-ARS 9000		
	ITEM	CODE NO.	SPECIFICATIONS	NO.	CODE NO.	SPECIFICATIONS
HARDNESS STANDARD BLOCK	M-037	700HVM	1	V-039	800HV	1
PRECISION VISE	M-027	Max. Opening: 50mm	1	V-027	Max. Opening: 50mm	1
DIAMOND INDENTER (BUILT-IN)	M-013	For Vickers (HV)	1	V-013	For Vickers (HV)	1
OBJECT LENS (BUILT-IN)	M-061	X 50	1	V-017	X 20	1
	M-018	X 10	1	V-018	X 10	1
LEVEL ADJUSTING LEG	M-052	For Hardness Tester	4	V-053	For Hardness Tester	4
LEVEL	M-066		1			—
INDENTER COVER (BUILT-IN)	M-053		1	V-054		1
INDENTER SHAFT FIXTURE (BUILT-IN)			—		For Transportation	1
SPARE LIGHT SOURCE BULB	M-044	6V18W	2	V-045	6V18W	2
CAMERA MOUNTING TUBE	M-054	For adapting CCD Camera	1	V-055	For adapting CCD Camera	1
MACHINE COVER	M-055	For Hardness Tester	1	V-056	For Hardness Tester	1
POWER CORD	M-051	For Hardness Tester	1	V-052	For Hardness Tester	1
SYSTEM CONNECTING CABLE			1			1
AUXILIARY TOOLS		Screw Drive, Wrench, etc.	1		Screw Drive, Wrench, etc.	1
ACCESSORY BOX	M-056	For Hardness Tester	1	V-057	For Hardness Tester	1
INSTRUCTION MANUAL			1			1
LOAD WEIGHTS SET		(Built-in)	1			1

FULLY-AUTOMATIC VICKERS HARDNESS TESTING SYSTEM **FV-ARS 9000**



RELATED AUTOMATIC SYSTEM	AR 90 : Automatic Reading System (CCD Camera / PC / AR 90 Software) ※ Capable to adapt to the existing FT Micro/Macro Vickers Hardness Testers
	ARS 900 : Automatic Reading System with Motorized X-Y Stage. (Auto-Reading / Auto-Stage / PC / Motor Driver / ARS 900 Software)

※ Appearance and specifications are subject to change without prior notice.



FUTURE-TECH CORP.

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