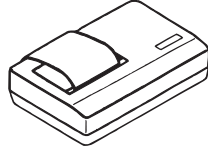

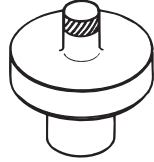
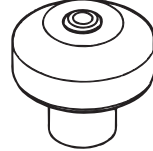


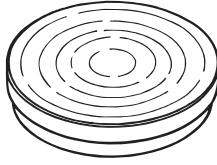
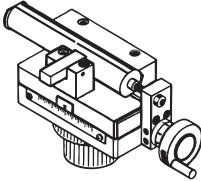
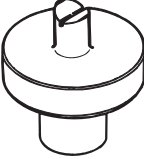
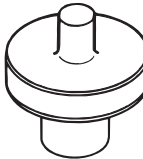
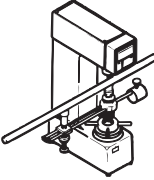
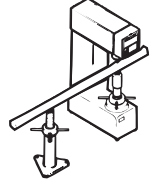


OPTIONAL ACCESSORIES

CODE No.	ITEM	CODE No.	ITEM	CODE No.	ITEM	CODE No.	ITEM
R-001	DIGITAL PRINTER 	R-005	STEEL BALL INDENTER: $\phi 1/8"$ 	R-026	ANVIL : CARBIDE SPOT 	R-027	ANVIL : DIAMOND SPOT 
R-006	STEEL BALL INDENTER: $\phi 1/4"$ 	R-007	STEEL BALL INDENTER: $\phi 1/2"$ 	R-028	ROUND TABLE : $\phi 200$ mm 	R-029	MICRO TEST TABLE FOR JOMINY TEST 
R-023	ANVIL : V-SHAPE (Small) 	R-025	ANVIL : SPOT 	R-030	LONG SPECIMEN TESTING JIG : VARI-REST 	R-031	LONG SPECIMEN TESTING JIG : JACK-REST 



<FM-810>
Digital Microhardness Tester

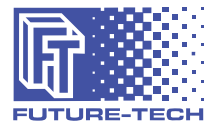


<FV-810>
Digital Vickers Hardness Tester



<FM-ARS 9000>
Full-Automatic Microhardness Testing System

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



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Agent :

FR-X Series

DIGITAL ROCKWELL TYPE HARDNESS TESTER



DIGITAL ROCKWELL TYPE HARDNESS TESTER **FR-X** Series

— **FR-X1, FR-X2, FR-X3** — **FR-X1L, FR-X2L, FR-X3L** —

Obtained the supreme precision and overwhelming reliability by the adoption of entirely new designing and precision manufacturing with no compromise! By the adoption of stealth type double information panel, improved the remarkable visibility and operation!

FEATURES

EMPHASIZED HIGH PRECISION

Reviewed the popular FR-e series and achieved the supreme precision.

STRENGTHENED BODY

Achieved the remarkable improvement of hardness measurement by the adoption of newly designed strong body. Prepared the maximum stroke of specimen of 255mm and long type of 400mm. (from the horizontal anvil to X3 and X3L)

STABLE LOADING AXIS MECHANISM

Adopted highly sensitive load shaft to prevent the side shift by the introduction of ball guide at the top and bottom. The stable measurement of hardness has become possible for the cylindrical and spherical surface.

COMPENSATION FUNCTION

Made possible the hardness compensation of multiple points to meet the various standards and the compensation of the cylindrical and spherical surface to comply with the shape of specimen.

STEALTH TYPE DOUBLE INFORMATION PANEL

Display the various information of OK/NG judgement and conversion and at the same time, display the measurement results. (Load and release of the test load, and automatic hardness indication)

FUNCTION OF DATA JUDGEMENT

Display the judgement of measurement data (HI/OK/LO), if you set the maximum value and minimum one and the mean value, if you set measurement point on the sub-information panel.

LED LIGHT

Obtained the supreme visibility of specimen in the dark environment and achieved the minute positioning.

USB DATA OUTPUT

Made the automatic transfer and reservation of CSV data into USB flash memory possible. (option)



〈FR-X/FR-XL/FR-AT〉 DISPLAY & OPERATION PANEL

SPECIFICATIONS

ITEM	FR-X1	FR-X1L	FR-X2	FR-X2L	FR-X3	FR-X3L
TYPE	Digital / Motorized					
LOAD	MINOR LOAD N : 98.07 kgf : 10		N : 29.42 kgf : 3		N : 29.42 & 98.07 kgf : 3 & 10	
	TEST LOAD N : 588.4 980.7 1471 kgf : 60 100 150		N : 147.1 294.2 441.3 kgf : 15 30 45		N : 147.1 294.2 441.3 kgf : 15 30 45 N : 588.4 980.7 1471 kgf : 60 100 150	
	Dial changing					
MINOR LOAD POSITION SETTING	Automatic setting (Electronic sound monitoring)					
LOAD CONTROL	Automatic (Application-holding-release)					
START OPERATION	Automatic start / Manual start					
LOADING SPEED	Approx. 2 sec (fixed)					
DWELL TIME	1-99 sec (Key entry in unit of 1 sec / Factory setting : 5 sec)					
PLASTIC MEASUREMENT MODE	Standard function (Time up to hardness value display after release of test load : 1 to 99 sec)					
HARDNESS CONVERSION	Capable in compliance with SAE (J-417b) & ASTM (E-140).					
COMPENSATION FUNCTION	Hardness compensation of multiple points / Cylindrical / Spherical surface					
OK / NG CRITERIA	Upper and lower limit setting, and HI / OK / LO display (HR 0 to 130, min. 0.1 hardness setting)					
DATA STORAGE	Automatically save the data in the CSV format to USB flash memory. (Option)					
SCALE DISPLAY	C, D, A, G, B, F, K, E, H, P, M, L, V, S, R		15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y		C, D, A, G, B, F, K, E, H, P, M, L, V, S, R, 15N, 30N, 45N, 15T, 30T, 45T, 15W, 30W, 45W, 15X, 30X, 45X, 15Y, 30Y, 45Y	
OUTPUT SIGNAL	RS232C (Baud rate : 9,600 bps)					
RS-232C OUTPUT & PRINTOUT MODE	① Measurement data only ② Measurement data and evaluation results (Max. value, min. value & HI / OK / LO) ③ Measurement data and conversion data ④ Measurement data, conversion data and evaluation results (Max. value, min. value & HI / OK / LO) ⑤ Measurement data and mean value					
ACCURACY	Conform to ASTM E18-15, JIS B-7726					
MAX. SPECIMEN HEIGHT	255 mm	435 mm	255 mm	400 mm	220 mm	405 mm
MAX. SPECIMEN DEPTH	165 mm					
DIMENSIONS	FR-X : W 196 x D 487 x H 820 mm / FR-XL : W 196 x D 487 x H 965 mm					
WEIGHT	82 kg	87 kg	80 kg	85 kg	83 kg	88 kg
POWER SUPPLY	Single phase AC 100V, 50 / 60HZ in Japan and AC 100 ~ 240V, 50 / 60HZ available for Export Model.					

STANDARD ACCESSORIES

CODE No.	ITEM	FR-X1	FR-X1L	FR-X2	FR-X2L	FR-X3	FR-X3L
R-012	HARDNESS STANDARD BLOCK	HRC	1	—	—	1	1
R-014		HRB	1	—	—	1	1
R-015		HR30N	—	—	1	—	1
R-016		HR30T	—	—	1	—	1
R-002	DIAMOND INDENTER	For ROCKWELL Type	1	—	—	—	—
R-003		For SUPERFICIAL & TWIN Type	—	—	1	—	1
R-004	STEEL BALL INDENTER (φ 1/16" / φ 1.588mm)	1	—	1	—	1	1
R-008	SPARE STEEL BALL (φ 1/16" / φ 1.588mm)	10	—	10	—	10	10
R-021	ANVIL	FLAT (φ 60mm)	1	—	1	—	1
R-022		V-SHAPE (LARGE)	1	—	1	—	1
R-042	POWER CABLE (3P-2.5mm)	1	—	1	—	1	1
R-043	LEVEL ADJUSTING LEG	4	—	4	—	4	4
R-044	MACHINE COVER	1	—	1	—	1	1
	INSTRUCTION AND MAINTENANCE MANUAL	1	—	1	—	1	1
R-045	ACCESSORY BOX	1	—	1	—	1	1