

JISC

JAPAN INSTRUMENTATION SYSTEM Co.,Ltd.

日本計測システム株式会社

日本試験機工業会々員

日本ばね機械工業会々員

Automatic Urethane Foam Tester



UFT series

AUTOMATIC URETHANE FOAM TESTER

Measuring high accuracy and smart urethane foam. This single unit supports various test standards such as JIS K6400-2 and JASO B408.

The UFT series uses three load cells. It is resistant to load eccentricity and can detect loads with high accuracy. The progress of the test can be confirmed by displaying the graph, and a series of measurements can be performed only on the main body until the evaluation work and statistical processing are performed. Since the content of the condition set once is stored in the tester main body, it is not necessary to reset the condition at the time of retest, and the test can be started easily.



Automatic Urethane Foam Tester

UFT-5KN / UFT-2KN

※Thermo-hygrometer is optional.

Measuring the molded product as it is



Three-point load cells are resistant to load eccentricity, so molded objects such as car seats can be measured as they are. The sample table is as wide as 1000×700mm, and various samples can be installed.

Extensive test specification

■ 試験規格一覧

Hardness test	JIS K6400-2 A / B / C / D
Compressed stress Test	JIS K6400-2 A-1 / A-2
Deflection test	JIS K6400-2 B
Constant load test	
Micro displacement spring rate test	
Stress relaxation test	
Compressive load test	
Multi-step test	

The condition can be set only by selecting the type of test from the test specification list. The condition content can be changed from the default value to suit the needs.

Easy-to-understand pickup settings

1	Initial thickness	I.T.							
2	Nth Hardness	Pos.1	1						
3	Nth Hardness	Pos.2	2						
4	Nth Hardness	Pos.3	3						
5									
6									
7									
8									

Urethane			
Initial thickness	Pre. Length	Pre. Load	N th Load
Nth Hardness	N th thickness	Nth Stress	Deflection Coefficient
Hysteresis loss rate	Compressive stress	Max Displacement Elasticity	Stress Relax Rate
Pre. Time (Load)	Pre. Time (Distance)	Pre. Load (Time)	Pre. Distance (Time)
Max Load	Max Load Distance	Load Disposition Spring Rate	Preload after Rest Time

Selecting a pick-up item displays an image diagram and description to support pick-up settings.

Flexible condition setting screen

K6400-2 HARD-B		Urethane		Hardness test K6400-2 HARD-B		Machine Specifications Setting	
Load Unit	N	kN	kgf	lbf			
Load Limit	5000			N			
Test Action	ABS.	DEF.			Pre. COMP. Ratio	100	70
Move Speed	1000	mm/min			1st time COMP. Ratio	100	25
Load Auto Zero	YES	NO			2nd time COMP. Ratio	100	40
Auto print	YES	NO			3rd time COMP. Ratio	100	65
Set position		mm			4th time		
Esc Position		mm			5th time		
Jig Height		mm			I.T. Load	5	N
Temperature	22.4	°C			I.T. Speed	100	mm/min
Humidity	45	%			Pre Comp. Times	3	Times
Jig Size	31400	mm ²			Rest Time		Sec
No. of samples		Times			I.T. Load Again	YES	NO
Interval time		sec			X Scale	0	~ 100 mm
Sampling Rate (Pt/Sec)	500	200	100	50	Y scale	0	~ 5000 N
	20	10	5	2	Superimpose	YES	NO

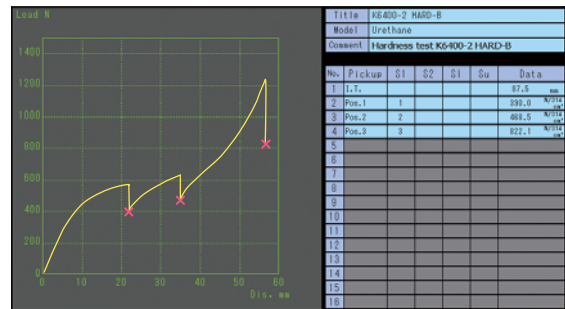
"Number of times", "%", and "rest time" can be specified, and it is possible to cope with the user's own hardness test standard and the deflection amount test standard under a constant load.

Condition Setting and Test Results Graph

■ Hardness test K6400-2 HARD-B

Test K6400-2 HARD-B					
Retrieve Specifications Setting					
	Action	Speed	Spec. Value	Unit	Hold Time
Pre.	COMP. Ratio	100	70	%	
1st time	COMP. Ratio	100	25	%	30
2nd time	COMP. Ratio	100	40	%	30
3rd time	COMP. Ratio	100	65	%	30
4th time					
5th time					

Select "Hardness Test K6400-2 HARD-B" from the test specification list to set the condition.

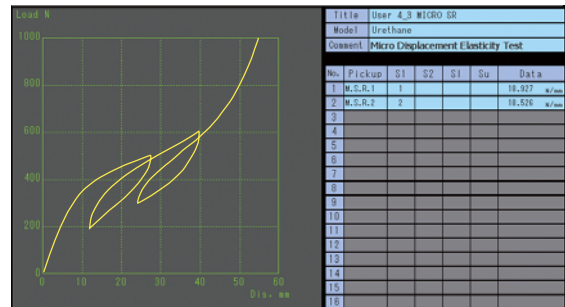


The test results are displayed graphically. The pickup is also displayed and the measurement results can be checked.

■ Micro displacement spring rate test

Minor Displacement Elasticity Test					
Retrieve Specifications Setting					
	Action	Speed	Spec. Value	Unit	Hold Time
Pre.	COMP. Ratio	50	75	%	
1st time	Load	50	500	N	
2nd time	Load	50	200	N	
3rd time	Load	50	600	N	
4th time	Load	50	300	N	
5th time	COMP. Ratio	50	75	%	

The setting of complicated conditions is completed only by selecting the contents from the test specification list. The figure above shows the requirements for "Minor displacement Spring Constants".



In the micro displacement spring rate test, the inclination between points b and f is picked up by defaults.

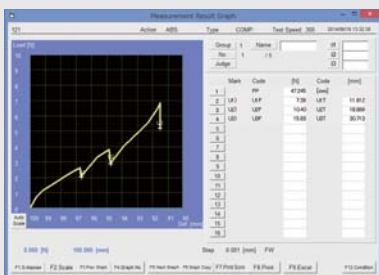
Optional PC software

MXR-01

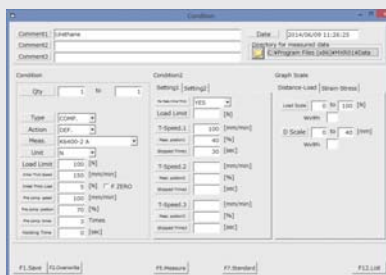
Full use of urethane tester function by connecting to PC software

Various tests of polyurethane foam conforming to JIS standards, including hardness tests, can be measured. The test can be started simply by selecting a preset test condition. Various pickup data can also be set. In addition, measurement results can be pasted to spreadsheet software, stored in CSV files, and quality control can be performed using histograms and Cp and Cpk.

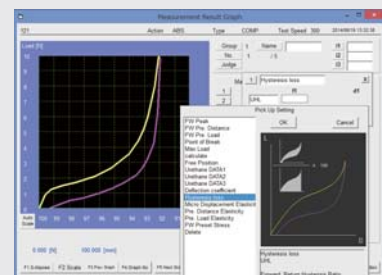
■ Measurement result graph screen



■ Measurement Conditions Setting Window



■ Pickup screen



Model	UFT-5KN / UFT-2KN				UFT-D-5KN	
Load capacity	5kN / 2kN				Mounted load cell (body load bearing: 5kN)	
Load cell	Three-point summation method				Adaptive load cell 10N to 5kN 0.5 to 3.0mV/V Load cell registrable number 5 channels	
Range switching	Automatic switching of 2 range				Automatic switching of 2 range (1/10 range & 1/1 range of load cell capacity)	
Load range [N]	5kN		2kN		Not more than 1/10 of the load cell capacity → 1/100,000 of the capacity resolution Up to 1/10 or more of the load cell capacity → 1/10,000 of the capacity resolution Example: 0.0001N 10N or more is 0.001N until 100N load cell = 10N 5 kN load cell = 0.005N up to 500N 0.005N 500N or more 0.05N	
	500	5000	200	2000		
Load resolution [N]	0.1	1	0.01	0.1		
Load accuracy	Within 0.5% of the indicated value				Within 1% of the indicated value	
Unit selection	N, kN (Selection of kgf and lbf for overseas specifications)				mN, N, kN (Selection of kgf, gf and lbf for overseas specifications)	
Length resolution	0.1mm or 0.01mm (Switchable)				0.01mm	
Maximum travel length	450mm				500mm	
Test speed	1~1000mm/min					
Crosshead control	Control by precision ball screws and AC servomotors					
Specimen table	W1000×D700				W600×D600	
Pressure plate	Φ200 ※This is a standard accessory. Φ50 ※This is an option.					
Move by Move key	High speed: speed 600 mm/min inching 1 mm medium speed: speed 60 mm/min inching 0.1 mm low speed: speed 6 mm/min inches					
Protective stop function	Stop by the upper/lower limit switch, Stop by the upper/lower soft limit function, Stopping with STOP keys and emergency stop button, Stop due to overload					
Display	Color LCDs	LED backlight and LCD with touch panel (resistive film type)			Fluorescent display	W115×H29 mm
	Backlight lifespan	70,000h			View number of pixel	256×64 Dotted
	External dimensions	W199.5×H147.4mm				
	Display-area	W170.4×H127.8mm				
	View number of pixel	800×600ドット				
Printer	Built-in printer	Thermal transfer type dot printer Print density 8 dots/mm Effective print width of 72mm Print speed 80mm/sec			External printer (optional)	
	ANALOG OUTPUT	FORCE (load)、DISTANCE (displacement)				
Interface	USB(PC)	Used to connect to a PC			RS232C : COM1⇒PC COM2⇒PRINTER etc. I/O Port : Photocoupler isolation input/output + common, input 8 points, output 8 points	
	USB	Three side ports USB (keyboard, mouse, memory, USB-compatible caliper) connectable				
	COM	Used for connection to external devices				
	I/O Port	Photocoupler isolation input/output +common input 8 points, output 8 points The function of the interface depends on the test program				
Power supply voltage	AC100~120V / AC200~240V					
Maximum power consumption	300VA				300VA	
Measure	W1125×D740×H1876				W1000×D550×H1750 (Include the control panel)	
Weight	About 350 kg				About 240 kg	
PC software	MXR-01 (Urethane Test Modes) ※Option You need a separate PC to use the MXR-01. Urethane testing is possible only with the main unit.				MXR-01 (Urethane Test Modes) ※Standard accessories. You need a separate PC to use the MXR-01. Urethane testing is not possible with the main unit alone.	

Measurement methods that meet user specifications can also be used.
Please feel free to ask us.

UFT-D models for testing planar-cut urethanes

Automatic Urethane Foam Tester

UFT-D-5KN

General-purpose load tester: HIT, table for polyurethane foam, set model of polyurethane foam test combining pressure plate and PC software

Urethane foam can be measured with a PC-soft MXR-01.
It can also be used as a general-purpose load tester.

※ Photographic pedestals are optional.



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●代理店

●製造販売元

日本試験機工業会々員
日本ばね機械工業会々員

JISC 日本計測システム株式会社

http://www.jisc-jp.com e-mail : sales@jisc-jp.com

- 本社 〒633-0077 奈良県桜井市大西526-1
TEL:0744-46-5521 FAX:0744-46-5527
 - 関東営業所 〒226-0025 神奈川県横浜市緑区十日市場町879-1
TEL:045-482-3885 FAX:045-482-3895
 - 大阪営業所 〒533-0023 大阪府大阪市東淀川区東淡路1-5-4-436
TEL:06-6325-8261 FAX:0744-46-5527
- 海外ネットワーク 中国・台湾・韓国・シンガポール・ベトナム
(マレーシア・タイ・インドネシア・フィリピン)