



# ***Hung Ta***

## ***Instrument Co., Ltd.***

advanced material and component testing instrumentation



## **Advanced Testing Systems**

helping engineers worldwide develop safer,  
more reliable materials and components



**HUNG TA INSTRUMENT CO., LTD.**, a pioneer in manufacturing quality control instruments, was established in August, 1975. With a corporate philosophy based on the principles of quality, technology and service, **HUNG TA** devotes a great deal of energy, effort, and R&D resources to create the best testing devices tailored for each field.

Our CAD-CAM and R&D center is fully equipped to ensure products with the most advanced technology, while maintaining affordability. **HUNG TA** has a state-of-the-art engineering department, with the know-how and ability to meet the high company standards for product reliability, innovation, and good after sales service.

In order to help our clients comply with global requirements of quality control management, the **HUNG TA** R&D department has spared no effort in developing over 1000 types of testing instruments applicable for a wide range of industries. Besides, some more new products like CCL laser thickness measurement system, CCD image inspection and defect-detection, size inspection and measurement system are all developed and listed in our range.

Societies around the world are becoming ever more complex. The demands on the infrastructure, and physical components of daily life increase yearly. Thus the need for highly accurate, thorough materials testing is growing.

**HUNG TA** is proud to offer new generations of universal testing machine that gives highly advanced features, excellent design, long life and affordability.

All **HUNG TA** testing machines are designed with the end users in mind. Not only are these machines a cost effective solution to the testing needs of modern industrial manufacturers, but they've also been designed with plenty of time-saving, and easy-of-use features. The powerful function and applications of automated control programs allow many standard tasks to be performed without the interaction of a technician, saving hours of labor costs.

**HUNG TA** is proud to have our force calibration laboratory approved by the CNLA (Chinese National Laboratory Accreditation). Certificates issued by Hung Ta are recognized by the government.

**HUNG TA** is also an authorized agent for a number of reputable American and European quality control equipment manufacturers.

We welcome you to call, write, email, or visit us for more information.

## Product and Industrial Applications for HUNG TA testing machines

bridge construction materials  
paper and pulp industries  
machinery and hardware  
sports rackets and clubs  
motorcycle components  
electrical wire and cable  
construction industries  
dyeing and finishing  
shoe manufacturing  
reinforced concrete  
auto components  
hardware items  
optical fiber  
textiles  
rubber  
plastic  
cable



Force calibration laboratory approved  
by the CNLA, ISO/IEC 17025 (1999)



Quality management System. ISO-9001 certified,  
certificate no. Q10161



Golden Elephant Prize  
(Quality Control Instrumentation Award)



- 1975** Established in Taichung City, Taiwan
- 1979** Moved to Taichung Industrial Park.  
New plant space: 4275 square meters.  
Won qualification as the first material testing machine  
manufacturing corporation in Taiwan,  
according to metrological regulations of  
National Bureau of Standard  
Taipei Office established  
Kaohsiung Office established  
Foreign Trade Department established in Taichung
- 1982** Hong Kong Office established
- 1986** Thailand Office established
- 1989** The first firm to receive accreditation of CNLA  
force calibration laboratory (Chinese National Laboratory Accreditation)
- 1991** Won Golden Elephant Prize (Quality Control Instrumentation Award)  
in Bangkok
- 1992** Joint development & research with Center for  
Measurement Standards for making High Accuracy  
Standard Dead-Weight Calibrating Machine 50,000 kgf  
Malaysia Office established
- 1994** Manufactured for the Center for Measurement Standards  
50,000 kgs/5,000 kgs Transverse Type Standard Dead-Weight  
Calibrating Machine  
Second plant established
- 1995** Secured registration of Automation Service  
Organization, Industrial Development  
Bureau, Ministry of Economic Affairs
- 1996** Won quality control management certified by ISO9001
- 1997** Won Taiwanese patent for Dynamic Testing Machine  
Won Taiwanese patent for Multi - Functional Structure Testing Machine  
Xiamen Office established
- 1999** Dongguan Office established  
Shanghai Office established  
Environment Engineering Department established
- 2001** Hung Ta Group formed
- 2002** Main plant expansion  
(located at the head office Taichung, Taiwan)
- 2004** Vietnam Office established
- 2005** Passed CE certification

## Accuracy certifications

The accuracy and precision attained by  
**HUNG TA** testing machines conforms to the  
requirements of international standards.

ASTM E4	GB16491-1995
BS1610	ISO 7500/1
CNS 9471/9470	JIS B7721/B7733
DIN5122	JJG139-1999
EN10002-2	





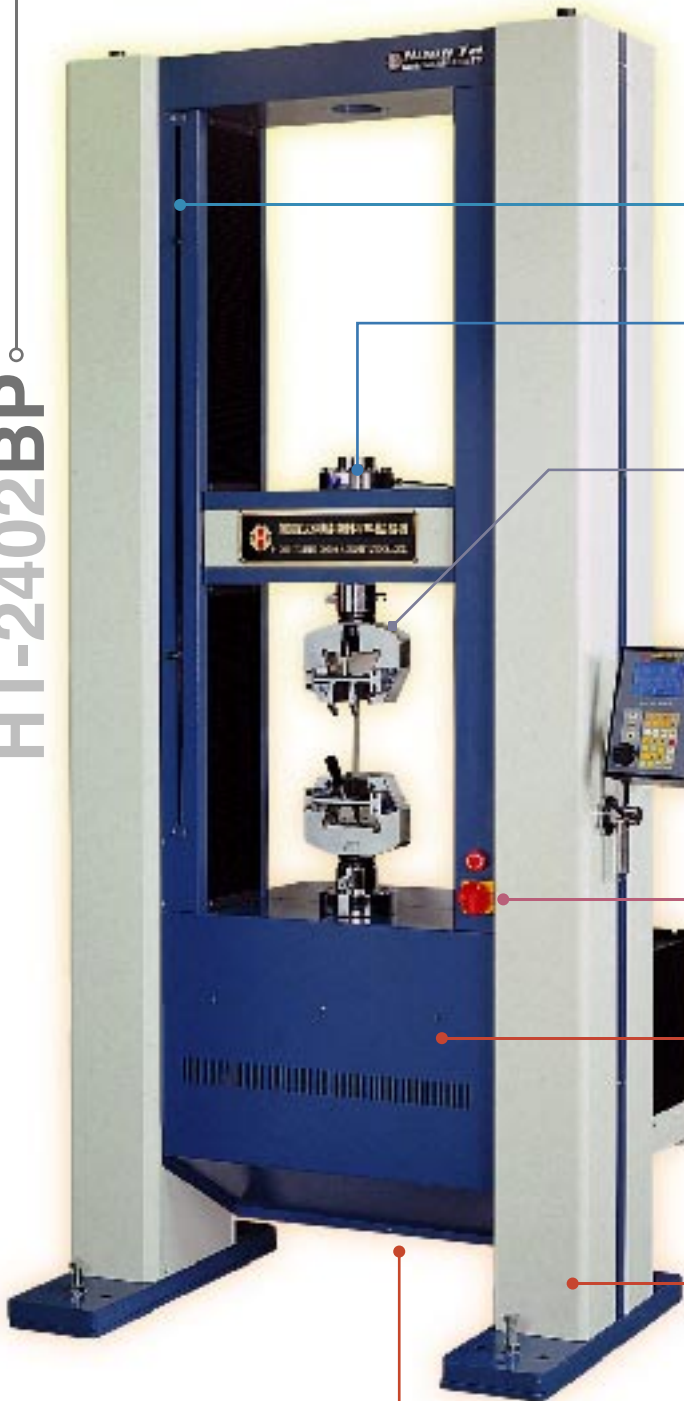
**Hung Ta Instrument Co., Ltd.** has designed a range of testing machines with the features and design of a top of the line machine, while maintaining the affordability you've come to expect from HUNG TA.

After sales service, technical support, and complete technical documentation - we've all the bases covered.

**HT-2402BP****Computer Servo Control Material Testing Machine  
Console Control System****High precision, high accuracy, high stability material testing machine**

ISO9001 certified, superior products fabricated by highly trained and experienced personnel

HT-2402BP

**Over-travel, over-load safety protection**

Built-in over-travel limitation setup and overload safety protection functions.

**High precision load cell**

Features a low-profile load cell, with stable load induction, high accuracy, high stability, and a safety factor of 150%

**Standardized, modular & interchangeable design**

Can be used with a range of testing grips suitable for tensile, compression, bending, peeling tests, and more. Switch grips easily for different testing samples.

**Intelligent Control and Display Unit**

Superior function, system-on-chip control indicator, available to control and display data alone. Resolution 1/20,000 Available to extend the connection up to four sets of load cell, or LVDT Conversation type setting and accurate fine tuning speed control. Single line transmission online with computer system

**Safety protector**

Designed with human engineering and safety in mind, the emergency stop button is located in the easiest access area possible.

**Economic use of space with high efficiency transmission design**Console interior apparatus  
High efficiency transmission mechanism and control system  
Integral measuring & acquisition system, saving structural space  
Easy to access controls**Beautiful modeling & high strength structure**Rigid, stable structure with four lead columns  
With large, attractive external cover  
Dual-color painting, state-of-the-art design**Comfortable operating space**

Plenty of leg room at the bottom of the console, comfortable and convenient when operating from a sitting position



## Computer Measuring System – Control & Edit Setting Functions

Intelligently engineered computer control & measuring software.  
Improve testing efficiency with powerful control functions.

### Basic control mode

Basic control mode contains fixed velocity, fixed displacement, constant load speed, fixed load, constant stress speed, constant strain speed

### Free control mode

Free control mode switching, contains displacement  $\geq$ , displacement  $\leq$ , load  $\geq$ , load  $\leq$ , yield point, break point, stress  $\geq$ , stress  $\leq$ , stress  $\geq$ , stress  $\leq$ .

### Additional Settings and modes

Available to freely set up cyclic mode

Define cyclic times

Conduct the next stage of control mode after the preset cycle is up

Mode set up for tensile and compression

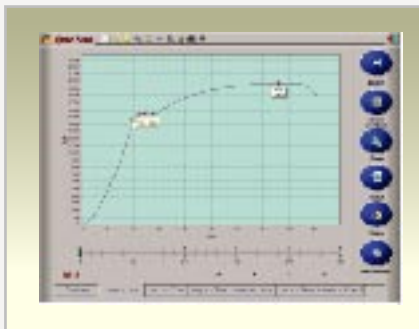
Control mode database management, available to repeat editing and setting.

Control mode can cover most international test standards like GB, CNS, ASTM, ISO, DIN, JIS, and so on

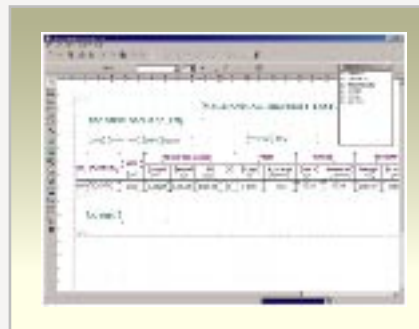
Low frequency testing



Main menu



Test graph



Report editor



Options



Control Editor

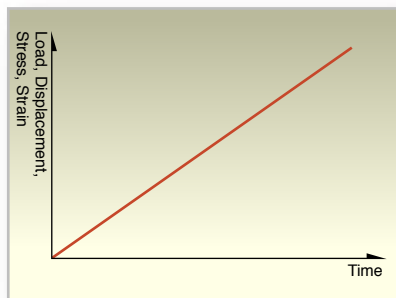


Specimens

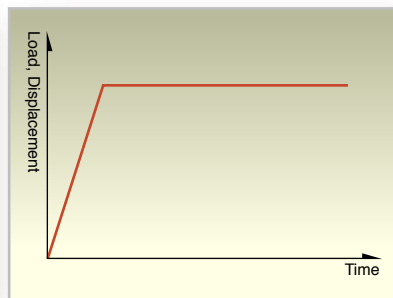
## Computer Measuring System – Operation Software Control Mode Functions

A variety of powerful test operation software is available, meeting major test requirements

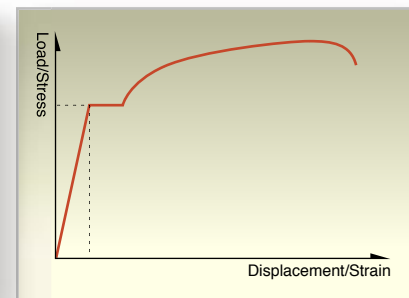
### STANDARD CONTROL MODES



No. 1

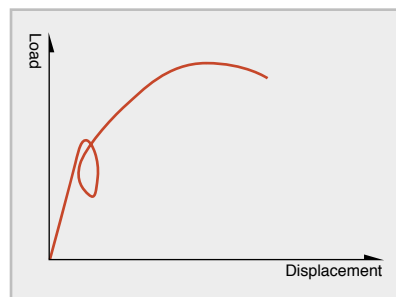


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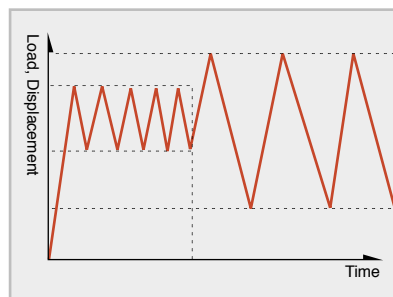


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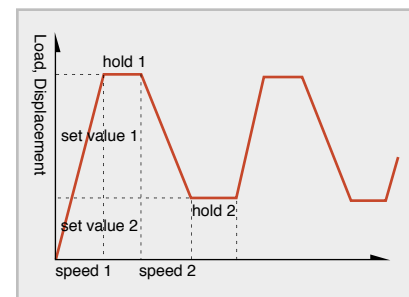
### SPECIAL CONTROL MODES : (for HT-2402BP only) (optional upon extra costs)



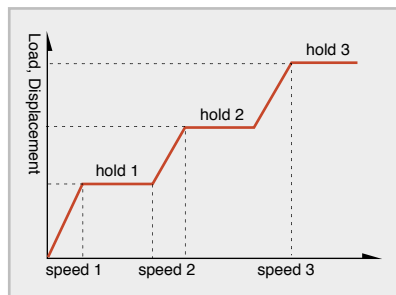
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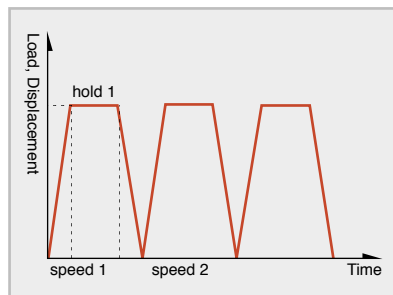
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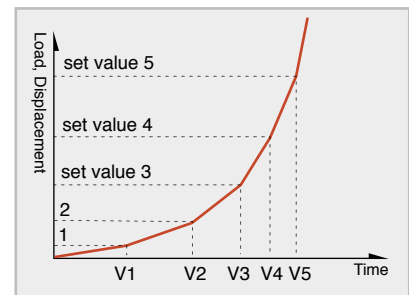
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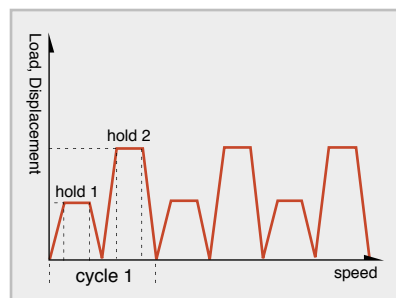
No. 7



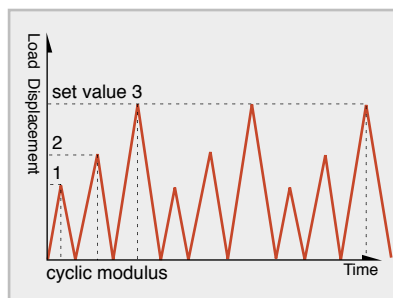
cyclic modulus No. 8



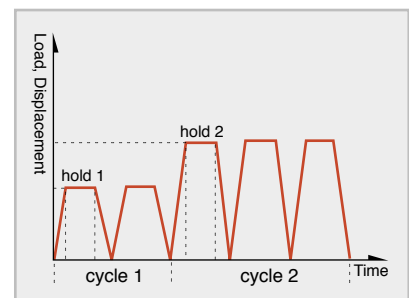
No. 9



No. 10

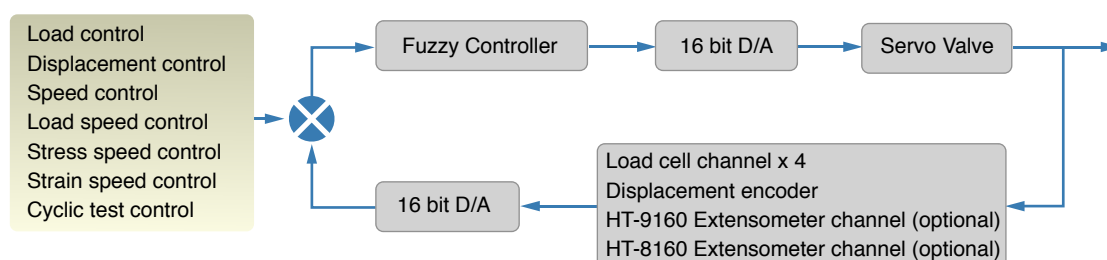


No. 11



No. 12

### CONTROL FUNCTION : BLOCK DIAGRAM







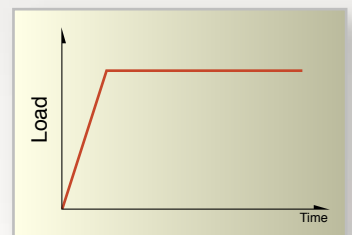
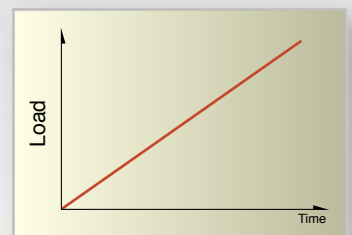
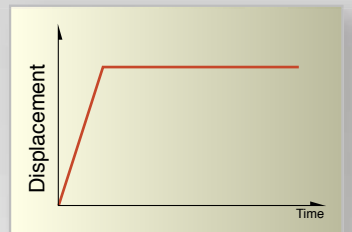
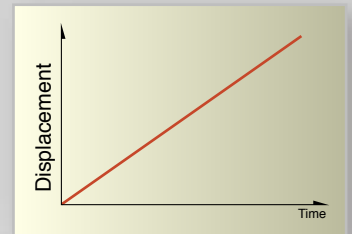
- Easily selectable to Chinese or English menus
- Load units available to switch among : N, kN  
Displacement unit available to switch among : mm, cm
- Large LCD display screen, with a back-lit blue screen. The display is clear and easy to read in low light conditions.
- A panel key directly controls the UP/DOWN function of crosshead, and can be used to preset test speed to low/middle/high
- With 28 function and numerical keys, the test function results and display feature a user-friendly interface
- A rotating knob for direct fine tuning control of the UP/DOWN function of the crosshead, and can be used to preset test speeds to low/middle/high

### FUNCTIONS

- Only a single connecting cable between the controller and the computer, safe and convenient
- Control mode through closed-loop fuzzy control, with wide application
- Four standard control modes:
  1. Fixed displacement control
  2. Fixed speed control
  3. Fixed load control
  4. Fixed load speed control
- A panel key directly controls the UP/DOWN function of the crosshead, and can be used to preset test speed at low/middle/high settings
- A rotating knob for direct fine tuning control of the UP/DOWN function of crosshead, and can be used to preset test speeds at low/middle/high settings
- A HOME key to return the crosshead back to original position from anywhere
- Displays the actual status of the tester
- Displays the values of load and displacement with the computer simultaneously
- 28 function and numerical keys, test function and display using conversational method
- Can be used to perform tensile testing, compression, etc.
- Can be extended up to 4 channels for load cell (optional)
- Load signal amplification 1,2,5,10 through auto range function
- With independent channel for HT-8160 (optional)
- Load unit available to switch among N, kN; displacement unit available to switch among mm, cm
- Available to auto shift to fixed position control function after testing
- With overload protection function in order to prevent load cell from overloading

### HARDWARE SPECIFICATIONS

- Load cell available to extend to 4 channels (350  $\Omega$ ), signal input range of load cell 2~4 mv/v
- A/D converting resolution 16 bit, A/D converting speed 25  $\mu$ s
- D/A converting resolution 16 bit
- Encoder transfer circuit resolution is 4 times better
- Input power available to switch to 110/220 V







**Computer Servo Control Material Testing Machines - multiple applications,  
with a wide range of testing functions for examining the physical properties  
of materials quickly and easily**



HT-2402



**HT-2402** Computer Servo Control  
Material Testing Machine  
capacity:250 ~ 50 kN

HT-2402BI



**HT-2402BI** SOC Control  
Material Testing Machine  
capacity:250 ~ 50 kN

HT-2402BP



**HT-2402BP** Computer Servo Control  
Material Testing Machine  
capacity:250 ~ 50 kN



Models		HT-2402, HT-2402BP, HT-2402BI			
Capacity	kN	250	100	50	
Measurement of test force	Standard-accuracy type (Class 1)	Accuracy of test force is better than ±1% within the range 1/1~1/250 of full scale of load cell, which conforms to most international standards such as ISO 7500/1 class 1, EN 10002-2 grade 1, BS 1610 class 1, DIN 51221 class 1, ASTM E4, JIS B7721 class 1, JIS B7723 class 1, JJG 475-88, GB/T 16491-1996 class 1 and CNS 9470/9471.			
	High-accuracy type (Class 0.5)	Accuracy of test force is better than ±0.5% within the range 1/1~1/250 of full scale of load cell, which conforms to most international standards such as ISO 7500/1 class 0.5, EN 10002-2 grade 0.5, BS 1610 class 0.5, DIN 51221 class 0.5, ASTM E4, JIS B7721 class 0.5, JIS B7723 class 0.5, JJG 139-1999, GB/T 16491-1996 class 0.5 and CNS 9470/9471.			
	Load cell	H-8336 Low profile high precision tension/compression load cell as standard (maximum force x 1 set, with excellent expanding feature, available to connect several load cells at a time – optional)			
	Load amplification	Type HT-2402 equipped with HUNG TA interface system, available with: ( A,B select one) <input type="checkbox"/> (A)x1, x2, x5, x10, x20, x50, x100 seven scales with auto range function,resolution 1/2000 <input type="checkbox"/> (B)x1, x2, x5, x10 four scales with auto range function, resolution 1/2000 function, resolution 1/20000			
		Types HT-2402BP and HT-2402BI equipped with HT-2010 control indicator, available with x1, x2, x5, x10 four scales with auto range function, resolution 1/20000			
	Selection of force units	N, kN			
Test speed range (mm/min), with stepless setting		Type HT-2402, 0.005~500 mm/min			
		Types HT-2402BP, HT-2402BI 0.05~500 mm/min			
		Force applied should be no less than 25% of full scale of load cell if test speed is greater than 50mm/min (GB/T 16491-1996)			
Accuracy of speed control		±1% (class 1) or ±0.2% (class 0.5)	±1% (class 1) or ±0.2% (class 0.5)	±1% (class 1) or ±0.2% (class 0.5)	
Effective test depth		575 mm	575 mm	575 mm	
Crosshead working table distance		Max. 1440 mm	Max. 1250 mm	MAX. 1250 mm	
Test stroke (equipped with standard tensile grips)		600 mm	650 mm	650 mm	
Over-travel & Overload protection function		Stroke up & down position protection setting, when test force exceeds 10% of full scale, system auto stop to protection the system from overloaded.			
Power	Servo motor	AC servo motor & servo driver			
	Consumption	7.5 kVA	3.5 kVA	2.2 kVA	
	Power supply	3Ø, 220VAC, 50/60 Hz (380V/415 V optional)			
Measuring system	Hardware	Refer to computer hardware specifications			
	Controller	HT-2402 connects HUNG TA Interface system; HT-2402BP/HT-2402BI connects HT-2010 Control indicator			
	Special software	Refer to special control modes of computer measuring system (optional)			
Dimensions	Console WxDxH	117x83x249 cm	111x76x225 cm	111x76x225 cm	
	Control unit WxDxH	HT-2402/HT-2402BP: 120x60x74 cm, HT-2402BI doesn't have control unit			
Weight	Console	1500 kg	1000 kg	750 kg	
	Control unit	100 kg	100 kg	100 kg	
Standard accessories		Tensile grips x 1 set, tool kit x 1 set, operation manual x 1 set, certificate of calibration x 1 set			
Optional accessories	Extensometer	Refer to the specifications of HT-9160, HT-9161, HT-9860, HT-8160 (optional)			
	Thermostat chamber	Refer to the specifications of HT-8747 series (optional)			
	Grips	Refer to the brochure of grips and fixtures, or provide specifications or actual samples for design and manufacture			



HT-2402

**HT-2402 Computer Servo Control  
Material Testing Machine**  
capacity: 20 ~ 1 kN



HT-2402BP

**HT-2402BP Computer Servo Control  
Material Testing Machine**  
capacity: 20 ~ 1 kN



HT-2402BI

**HT-2402BI SOC Control  
Material Testing Machine**  
capacity: 20 ~ 1 kN  
HT-8160 optional





Models		HT-2402, HT-2402BP, HT-2402BI				
Capacity	kN	20	10	5	2	1
Measurement of test force	Standard-accuracy type (Class 1)	Accuracy of test force is better than $\pm 1\%$ within the range 1/1~1/250 of full scale of load cell, which conforms to most international standards such as ISO 7500/1 class 1, EN 10002-2 grade 1, BS 1610 class 1, DIN 51221 class 1, ASTM E4, JIS B7721 class 1, JIS B7723 class 1, JJG 139-1999, GB/T 16491-1996 class 1 and CNS 9470/9471.				
	High-accuracy type (Class 0.5)	Accuracy of test force is better than $\pm 0.5\%$ within the range 1/1~1/250 of full scale of load cell, which conforms to most international standards such as ISO 7500/1 class 0, EN 10002-2 grade 0.5, BS 1610 class 0.5, DIN 51221 class 1, ASTM E4,JIS B7721 class 0.5, JIS B7723 class 0.5, JJG 139-1999, GB/T 16491-1996 class 0.5 and CNS 9470/9471 (optional)				
	Load cell	H-8336 High precision tension/compression load cell as standard (maximum force X 1 set, with excellent expanding feature, available to connect some load cells at a time) (optional)				
	Load amplification	Type HT-2402 equipped with HUNG TA interface system, available with: (A,B select one) <input type="checkbox"/> (A)x1, x2, x5, x10, x20, x50, x100 seven scales with auto range function,resolution 1/2000 <input type="checkbox"/> (B)x1, x2, x5, x10 four scales with auto range function, resolution 1/20000				
		Types HT-2402BP and HT-2402BI equipped with HT-2010 control indicator, available with x1, x2, x5, x10 four scales with auto range function, resolution 1/20000				
	Selection of force units	N, kN				
Test speed range (mm/min), with stepless setting		Type HT-2402: 0.005 ~500 mm/min (0.005~1000 mm/min for capacities less than 5 kN)				
		Types HT-2402BP / HT-2402BI: 0.05~500 mm/min (0.05~1000 mm/min for capacities less than 5 kN)				
		Force applied should be no less than 25% of full scale of load cell if test speed is greater than 50mm/min (GB/T 16491-1996)				
Accuracy of speed control		$\pm 1\%$ (class 1) or $\pm 0.2\%$ (class 0.5 )				
Effective test width		standard type: 380 mm		special type: 560 mm		
Crosshead working table distance		standard type: 1100 mm		special type: 1600 mm		
Test stroke (equipped with standard tensile grips)	1~10KN	standard type: 800 mm		special type: 1300 mm		
	20KN	standard type: 750 mm		special type: 1250 mm		
Over-travel & Overload protection function		Stroke up & down position protection setting, when test force exceeds 10% of full scale, system auto stop to protection the system from overloaded.				
Power	Servo motor	AC servo motor & servo driver				
	Consumption	0.75 kVA; 20 kN type: 1.2 kVA				
	Power supply	1Ø, 220 VAC, 50/60 Hz				
Measuring system	Hardware	Refer to computer hardware specifications				
	Controller	HT-2402 connects HUNG TA Interface system; HT-2402BP / HT-2402BI connects HT-2010 Control indicator				
	Special software	Refer to special control modes of computer measuring system (optional)				
Dimensions	Console WxDxH	80x70x217 cm (wider type 98x70x217 cm, taller type 98x70x267 cm)				
	Control unit WxDxH	HT-2402/HT-2402BP type: 120x60x74 cm, HT-2402BI type without control unit				
Weight	Console	300 kg (wider type 380 kg, taller type 380 kg)				
	Control unit	100 kg				
Standard accessories		Tensile grips x 1 set, tool kit x 1 set, operation manual x 1 set, certificate of calibration x 1 set				
Optional accessories	Extensometer	Refer to the specifications of HT-9160, HT-9161, HT-9860, HT-8160 (optional)				
	Thermostat chamber	Refer to the specifications of HT-8747 series (optional, available only with effective test width is 560 mm)				
	Grips	Refer to the brochure of grips and fixtures, or provide specifications for design and manufacture				

# HT-2328 Series

## Single Column Universal Materials Testing Machine



HT-2328

**HT-2328**  
Computer Type Single  
Column Universal Materials  
Testing Machine



HT-2328BP

**HT-2328BP**  
Computer SOC Control Single  
Column Universal Materials  
Testing Machine



HT-2328BI

**HT-2328BI**  
SOC Control Single  
Column Universal  
Materials Testing Machine

### Console Specifications

Models		HT-2328, HT-2328BP, HT-2328BI				
Capacity	kN	2	1	0.5	0.2	0.1
	Standard-accuracy type	Accuracy of test force is better than $\pm 1\%$ within the range 1/1~1/50 of full scale of load cell				
Measurement of test force	Load cell	HT-8336 High precision tension/compression load cell as standard (maximum force X 1 set, with excellent expanding feature, available to connect some load cells at a time – optional)				
	Load amplification	Type HT-2328 equipped with HUNG TA interface system, available with: (A,B select one) <input type="checkbox"/> (A)x1, x2, x5, x10, x20, x50, x100 seven scales with auto range function, resolution 1/2000 <input type="checkbox"/> (B)x1, x2, x5, x10 four scales with auto range function, resolution 1/20000 Type HT-2328BP, HT-2328BI Equipped with HT-2010 control indicator, available with x1, x2, x5, x10 four scales with auto range function, resolution 1/20000				
	Selection of force units	N, kN				
Test speed range (select one)		<input type="checkbox"/> A: Servo motor type: 0.005~1000 mm/min (Suitable for HT-2328 only)				
		<input type="checkbox"/> B: Servo motor type: 0.05~1000 mm/min (Suitable for HT-2328BP only)				
		<input type="checkbox"/> C: DC motor type : 10~500 mm/min (Suitable for HT-2328BP only)				
		<input type="checkbox"/> D: DC motor type : 10~1000 mm/min (Suitable for HT-2328BP only)				
		<input type="checkbox"/> E: DC motor type : 0.5~1000 mm/min (Suitable for HT-2328 only)				
		<input type="checkbox"/> F: DC motor type : 100~1000 mm/min				
Effective test depth		125 mm (distance of clamping center to column side)				
Crosshead working table distance		<input type="checkbox"/> standard type: 750 mm <input type="checkbox"/> special type: 1150 mm				
Test stroke (equipped with standard tensile grips)		<input type="checkbox"/> standard type: 560 mm <input type="checkbox"/> special type: 960 mm				
Over-travel & Overload protection function		Stroke up & down position protection setting, when test force exceeds 10% of full scale, system auto stop to protection the system from overloaded.				
Power	Consumption	0.5 kVA				
	Power source	1Ø, 220 VAC, 50/60 Hz				
Dimensions	Console WxDxH	<input type="checkbox"/> standard type: 56x50x126 cm <input type="checkbox"/> special type: 56x50x166 cm				
	Unit	100x48x42 cm (computer hardware + monitor + printer)				
Weight	Console	<input type="checkbox"/> standard type: 54 kg <input type="checkbox"/> special type: 60 kg				
Standard accessories		Tensile grips x 1 set, tool kit x 1 set, operation manual x 1 set, certificate of calibration x 1 set				



### HT-9770 Automatic dead-weight original class standard calibrator

Superior quality products need the assistance of professional technical capability and professional equipment. High accuracy inspecting and calibration equipment, guarantees the measuring accuracy. Professional manufacturing technology experiences of more than 30 years ensures high stability of products.

- This calibrator was developed through our cooperation with the Center for Measurement Standards
- 2,000 kN (200,000 kg) HT-9770B Automatic dead-weight original class standard calibrator (lever type)
- 500 kN (50,000 kg) HT-9770B Automatic dead-weight original class standard calibrator (lever type)
- 50 kN (5,000 kg) HT-9770 Automatic dead-weight original class standard calibrator
- 5 kN (500 kg) HT-9770 Automatic dead-weight original class standard calibrator
- High accuracy load cell standard calibrator, range 0~2,000 kN (0~200,000 kgf)



Type 5 ~ 50 kN Series

### HT-2502 Digital Extensometer Calibrator

Measuring accuracy:  $\pm 0.001$  mm

Measuring stroke: 0~50 mm

Suitable: Metal extensometers



High accuracy extensometer calibration apparatus, ensuring elongation measuring accuracy



Models	HT-8747A	HT-8747B	HT-8747C	HT-8747D
Measurement of test force	Rt ~ +200℃	-30~ +200℃	-50~ +200℃	+30℃~ +800℃
Inside dimensions (WxDxH)	<input type="checkbox"/> <b>standard type:</b> 30x30x60 cm <input type="checkbox"/> <b>special type:</b> 30x45x60 cm			φ21x25 cm
outside dimensions (WxDxH)	standard	48x82x82 cm	48x100x90 cm	48x120x90 cm
	special	48x100x82 cm	48x100x105 cm	48x120x135 cm
Method of heat-up or cool-down	Electric heating	Electric heating & refrigerant with compressor		Electric heating
Temperature control method	PID automatic temperature controller with digital temperature indicator			
Applied models	Suitable for HT-2402, HT-9102, HT-2102 type series tensile testers			
Power supply	1 phase 220 V			



HT-8747 A / B / C Type Thermostat testing chamber  
 HT-2402 / HT-2102 / HT-9102 / HT-8503  
 For capacities less than **20kN**, it is suitable for special (wider ) type **560 mm** only



HT-8160 Two extensometer can be selected together with HT-8747 series chambers, but cannot be used at the same time.



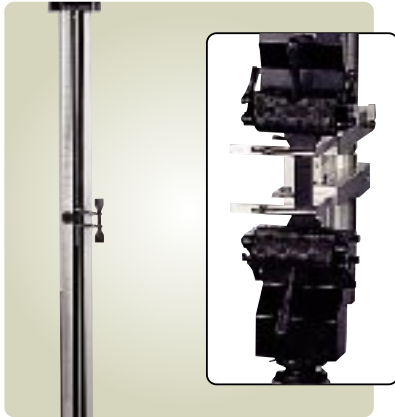
HT-8474D Type Thermostat testing chamber





Two-point extensometer series (Suitable for models HT-2402, HT-2101, HT-9501)

Models	HT-8160A	HT-8160B	HT-9160A	HT-9160B	HT-9160C	HT-9160D	HT-9161
Gauge length (mm)	20~40		50	50	100	25	50
Travel (mm)	0~800		25	5	25	5	25
Resolution (mm)	0.02		0.001				0.001
Application	Rubber, plastic, PE board, fabric, webbing, textile	PE film, latex, PVC tubing industry	Suitable for measuring elongation for metal, or non-metal materials with lower deformation, suitable for working circumstance Rt ~50°C				

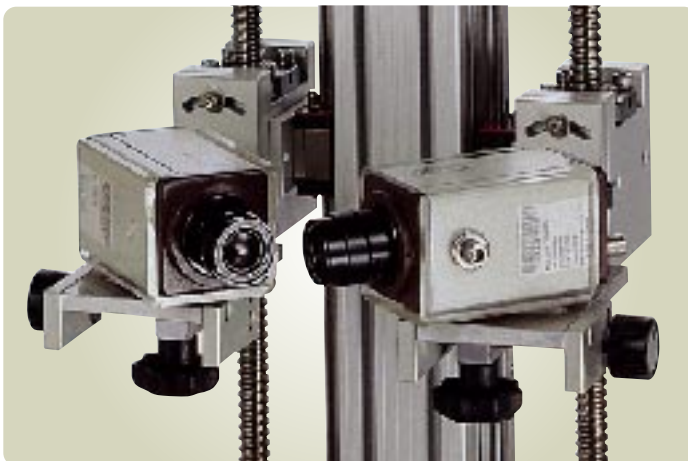


HT-8160



HT-9160

Model	HT-9860 video extensometer
Resolution (mm)	0.025
Measuring range (mm)	Max 2000
Measuring method	computer-aided image recognition and automatic tracking marking points control & measurement
Quantity	2 pcs
Driving method	Step motor
Driving media	Ball screw x 2 pcs
Method of transmission	LAN
Computer system	PIII 850MHz or above, VGA card, AGP 32MB, TNT or above, Windows 2000 Professional



HT-9860



HT-9161 made in USA



Hydraulic series and pneumatic series grips are optional, with excellent and convenient features for operation.

Models	SF-014D	SF-004	SF-051	SF-063	SF-006	SF-301
capacity (kN)	250	100	50	20	10	5
clamping range (mm)	round	Ø6~Ø13, Ø13~Ø26, Ø26~Ø38	Ø6~Ø13, Ø13~Ø22	Ø6~Ø13	Ø6~Ø13	Ø5~Ø13
	flat	0~25 wide 50	0~14 wide 45	0~8 wide 45	0~8 wide 30	0~8 wide 30
weight (kg)	30	12	8	5	3	2



SF-014D



SF-004



SF-051



SF-063

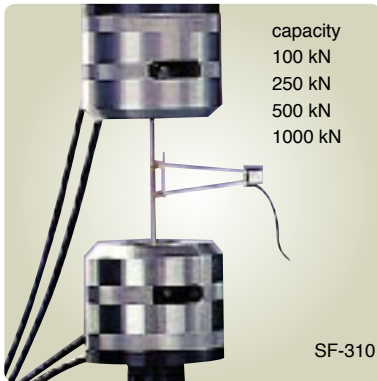


SF-006



SF-301

Model		SF-310				SF-134	SF-082	SF-116	SF-609B
driving method		hydraulic grips				pneumatic tensile grips			
capacity(㎏N)		1000	500	250	100	10	0.5 / 2	1	0.5
clamping range (mm)	round	φ10~25, φ25~40	φ10~25, φ25~40	φ5~15, φ15~30	φ5~15	φ5~13			within φ2
	flat	0~15 / 15~30 width 100	0~15 / 15~30 width 76	0~15 / 15~30 width 76	0~15 width 50	0~8 width 30	0~6 width	0~6 width	



SF-310



SF-134



SF-082



SF-116



SF-609B

SF-082: jaw: 1"x1", 1"x3" / 1"x2", 1"x3" / 1"x3", 1"x3" (select one)  
SF-116: jaw: 1"x1", 1"x3" / 1"x2", 1"x3" (select one)

Models	SF-046	SF-089C	SF-158	SF-003B	SF-093	SF-147
application	Fixtures for bolt/nut shape	Tensile grips for cloth strip	Spool flat closed clamp	Type tensile grips	Series tensile grips	Wedge clamps self closing grips
	Bolts/nuts & mooring	Webbing & straps	Ropes & cable	Fabric, textile & leather	Rubber & plastic	Tensile tests for finished products
capacity (kN)	50 / 300 / 600	5 / 50 / 100	2 / 10	1 / 5	1	1
clamping range (mm)	50 kN: M4-M10 300 kN: M6-M16 600 kN: M6-M36	5 kN: 0-25 50 kN: 0-50 100 kN: 0-100	2 kN: Ø6 10 kN: Ø12	16	8x50	10x6 10x25



SF-046



SF-089C



SF-158



SF-003B



SF-093



SF-147



## Compression testing fixtures series

Compression platens for metal, rubber, timbering and cement

Models	SF-156A	SF-156B	SF-156C	
Platen size (mm)	Ø75	Ø120	Ø160	
Models	SF-156D	SF-156E	SF-156F	SF-201
Platen size (mm)	Ø220	Ø280	Ø300	150x300

Special sizes are available upon request



SF-156

Ball-seat compression platen for concrete cylinders

Models	SF-122A	SF-122B	
Platen size (mm)	Ø75	Ø102	
Models	SF-122C	SF-122D	SF-122E
Platen size (mm)	Ø154	Ø204	Ø278

Special sizes are available upon request



SF-122A

## Bending test fixtures for metal, china/ceramic, tile, concrete cylinder, timber, and so on.

Central loading (3-point) bending fixtures

Models	SF-002A series	SF-155A series
Maximum load (kN)	10~100	300
Loading Radius (mm)	R2, R5, R1/8 (optional)	R15
Supporting Radius (mm)	R2, R5, R1/8 (optional)	R15
Width (mm)	50 (110~600 optional)	120
Supporting distance (mm)	20~80 / 20~200 / 20~600	30~400

Special sizes are available upon request



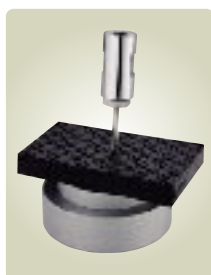
SF-002A



SF-155A

Models	SF-087A	SF-139A	SF-081	SF-102	SF-100	SF-148
	puncture fixtures for safety shoes	plywood shearing fixture	90° Peeling fixtures	adhesion grips for ceramics	Lunging fixtures	Plunger fixtures

A variety of clamping apparatus choices to meet diverse experimental requirements



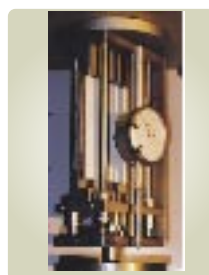
SF-087A



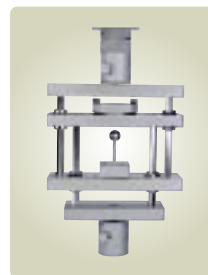
SF-139A



SF-081



SF-102



SF-100



SF-148





SINCE 1975



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