



HUNG TA INSTRUMENT CO., LTD.

Electro-Hydraulic Universal Testing Machines



Advanced Testing Systems
helping engineers worldwide develop safer,
more reliable materials and components.



Company Profile

HUNG TA INSTRUMENT CO., LTD., a pioneer in manufacturing quality control instruments, was established in September 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 of advanced technology, state of art knowhow in order to meet our company's strict policy of reliability, tenacity of purpose and good after sales service.

In order to comply with world wide requirement of quality control management, our R&D department has spared on effort in developing up to 2000 types of various reliable testing instruments.

Our range of testing equipments are suitable for quality control of products of various fields, including rubber, plastic, shoe manufacturing, paper and pulp industries, machinery and hardware, construction industries, automobile parts, bicycle parts, electrical wire and cable, They meet the needs of testing products like automobile, motorcycle, rackets, clubs, hardware items as well, reinforced concrete, bridge, optical fiber, cable, textile, dyeing and finishing, as well as environmental test equipments.

We also represent a number of reputable quality control equipments manufactured by renown American and European producers.

We are proud to be the first Taiwanese manufacturer approved by Taiwan Accreditation Foundation as an laboratory for inspection and calibration (Calibration cert. No. 0002, Testing Laboratory No. 2717). And we are licensed to issue certificates of calibration which recognized by the government.

We welcome you to contact us, email, or visit our website for further information.



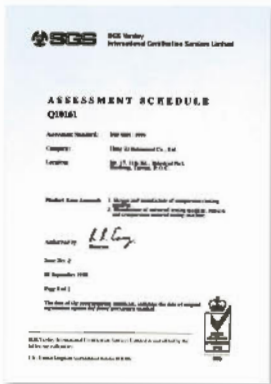
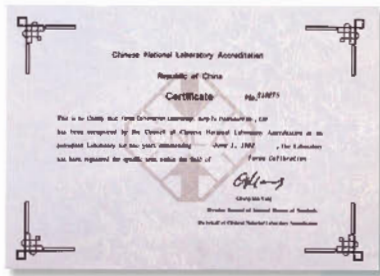
**Hung Ta, Taiwan's First Maker
of Precision Testing and
Inspection Equipment**

<http://www.hungta.com>

History & Certifications

History

- 1975 - Established in Taichung City, Taiwan
Moved to Taichung Industrial Park.
- 1979 - Won qualification as the first material testing machine manufacturing corporate in Taiwan, according to metrological regulations of National Bureau of Standard Taiwan, according to metrological regulations of National Bureau of Standard
 - Taipei Office established
 - Kaohsiung Office established
 - Foreign Trade Department established
- 1982 - Hong Kong Office established
- 1986 - Thailand Office established
- 1989 - The first firm got the 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 Calibration Machine
- 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 established
- 2002 - Building of Mother factory (Head office), Taichung, Taiwan Expanded
- 2004 - Vietnam Office established
- 2010 - New Factory Established in Taichung City Precision Machinery Innovation Technology Park
- 2014 - New Headquarters & Factory Established in Taichung City Precision Machinery Innovation Technology Park.



Golden Elephant Prize of Bangkok (Quality Control Instrumentation Award)



Accuracy Certifications

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

- | | |
|-------------------|-------------------|
| ASTM E4 | GB / T 7314-2005 |
| ASTM E8-04 | GB / T 16826-2008 |
| BS 1610 | ISO 7500 -1:2004 |
| CNS 9471 / 9470 | ISO 6892-1:2009 |
| EN10002-1 | JIS B 7721-2002 |
| GB / T 228-2010 | JIS Z 22410-2008 |
| GB / T 232-2010 | JJG 139-1999 |
| GB / T 17200-1997 | JB/T 6146-2007 |
| GB / T 16491-2008 | JB/T 7797-1995 |

HT-2101 HT-9501 Series

Electro-Hydraulic Servo Universal Testing Machines

ISO-7500- 1-2004, GB/T 16826-2008



HIGH PRECISION

Adopts high precision **Load Cell**, with special production process gap-free ball screws, force accuracy can reach up to class 1 or class 0.5, displacement measuring accuracy $\pm 0.5\%$, which conforms to most international standards.

HIGH EFFICIENCY

Front open crosshead hydraulic grips design, easy and convenient for mounting specimen, safe and accurate.

HIGH SAFETY

Adopts hydraulic motor, stable for driving system up or down, durable and safe, with convenient remote controller, Self-moving crosshead adjusting mechanism, non-rotating of screws, ensuring high safety.

MULTI FUNCTIONS

With many different test applications, software and grips can be applied for various materials, finished products for the test of tensile, compression, shear bending transverse, peeling, tearing, adhesion, bonding, high/low temperature environmental tests and displacement measuring tests.

HIGH QUALITY

High stiffness **FCD55** structural frame, with high strength axle material, durable steel construction and long time operation. Hydraulic system adopts high torque motor, high efficiency pump and **High-Response Servo Valve**, high functional filter and working oil cooling system, safe to operate with multi-protection design and various modularized test applications, with meets the needs form many different fields.

STANDARDIZATION

Gripping base adopts modularized design, easy to interchange different jaws, easy and economic. special equipment also adopts modularized package, with convenient options.

HIGH PERFORMANCE

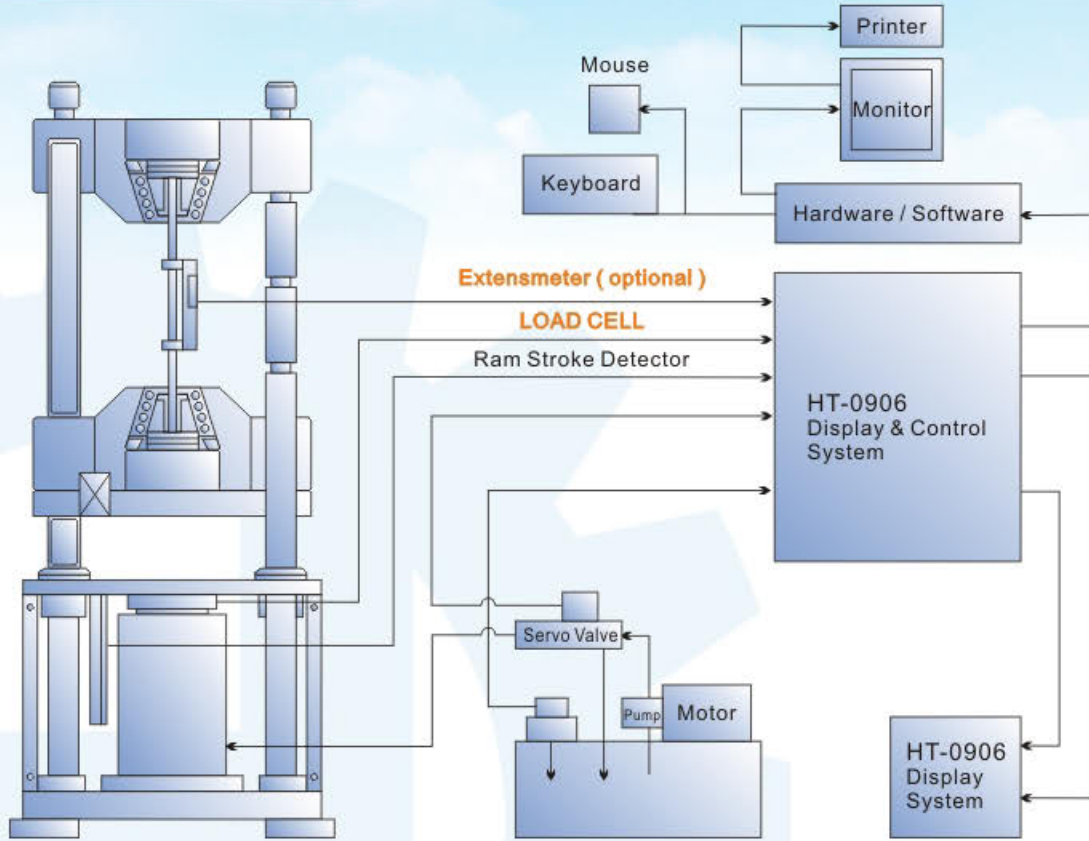
With closed-loop servo hydraulic control system, equipped with full-functional window-based data analysis and control software, and powerful test functions. Available to execute **Low-Cycle Fatigue Test**, and many advance system control performance.

HT-2101 HT-9501 Series

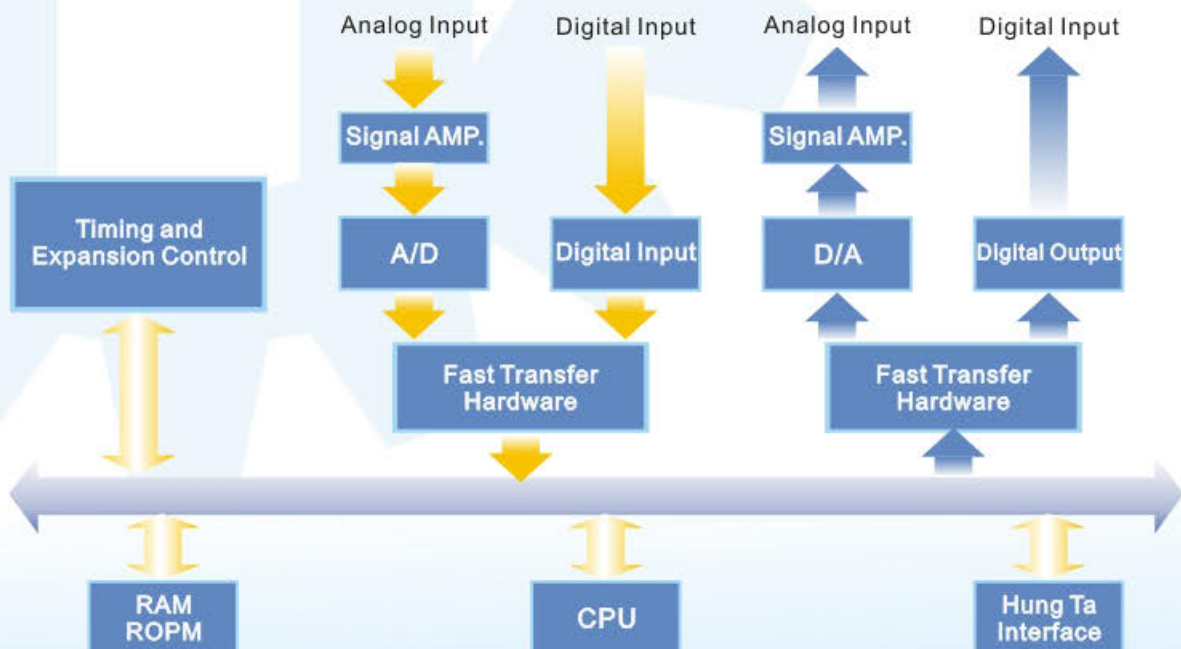
Electro-Hydraulic Servo Universal Testing Machines

ISO-7500- 1-2004, GB/T 16826-2008

System Assembly Diagram



Data Acquisition & Control System Diagram



Computer System *Super Powerful Program, With Superior Control Functions*

Computer Measuring System – Control & Edit Setting Functions

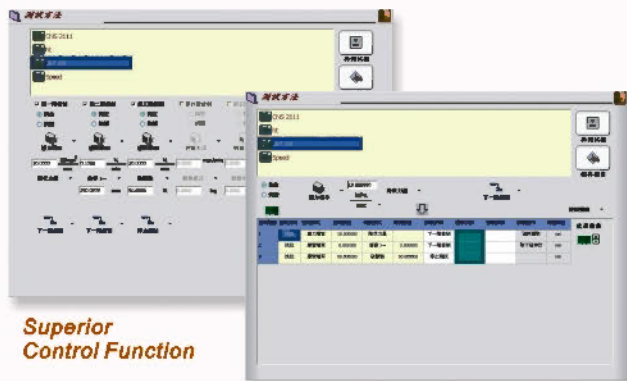
Intelligently computer control & measuring software to improve testing efficiency.

Powerful Control Functions

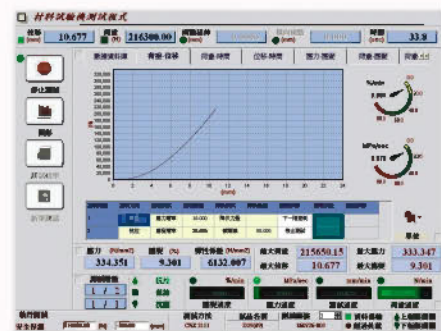
- Basic control mode contains fixed velocity, fixed displacement, constant load speed, fixed load, constant stress speed & constant strain speed.
- Available to freely set up cyclic mode, define cyclictimes, conduct the next stage of control mode after the preset cycle is up to next set up control mode.
- Set up for tensile and compression mode.
- 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.
- Able to do low frequency testing.

Intelligently Computer System

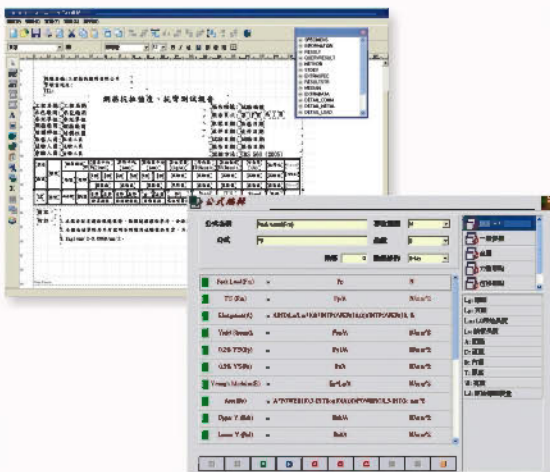
- Operation system is Windows XP 32 bit or above in Chinese or English version, more safety and stability.
- The icon fined interface for easy learning operation.
- Use database management for testing standards such as sample information, testing results and expansion powerful.
- Real-time graphic switching display, catch test dynamic and high integrity. Graphics includes Load-Displacement, Load-Time, Displacement-Time, Strain-Stress, Load-Horizontal Extensometer and Load-Vertical Extensometer.
- Open editing formula, formula is easy to learn and including general test such as Metal, Rubber, Footwear, Peeling industries.
- Testing standard is able to set load point, displacement point, interval setting and yield point interval setting.
- Able to recalculate and analysis testing information or each parameter and formula calculation.



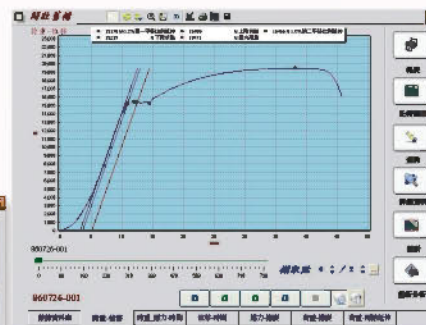
Superior Control Function



Real-Time Display



Excellent Formula and Report Editor

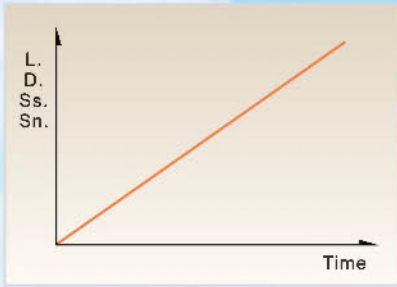


Simple Setting

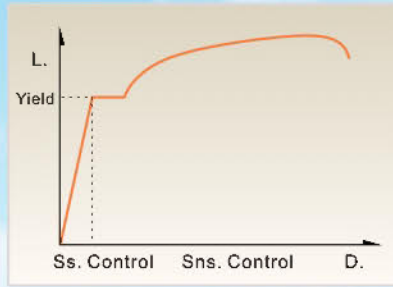
Computer System

Powerful Control Functions

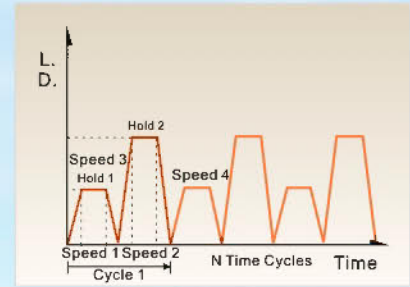
L. = Loading, D. = Displacement, Ss. = Stress, Sn. = Strain



No. 01



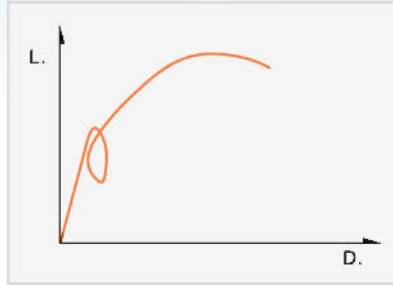
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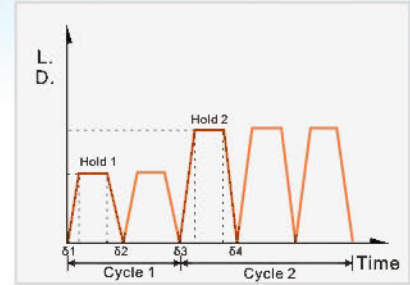
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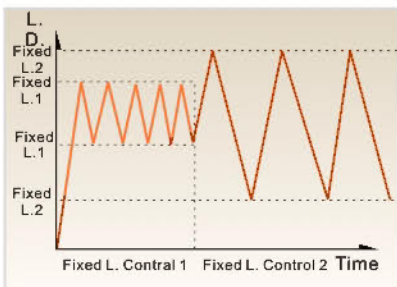
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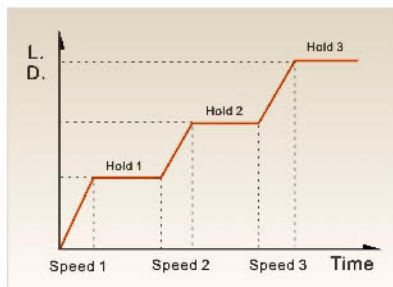
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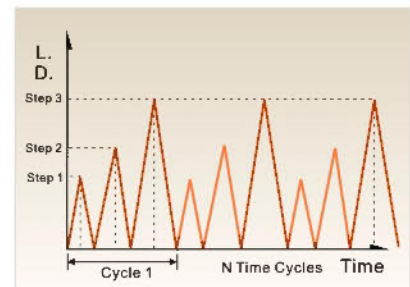
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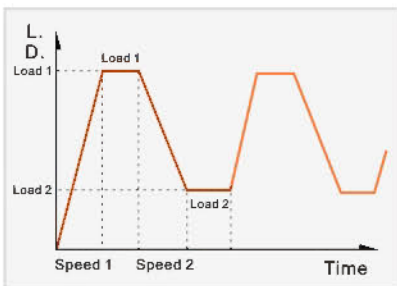
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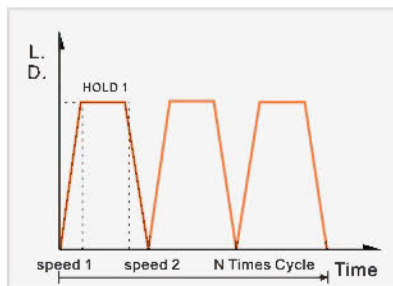
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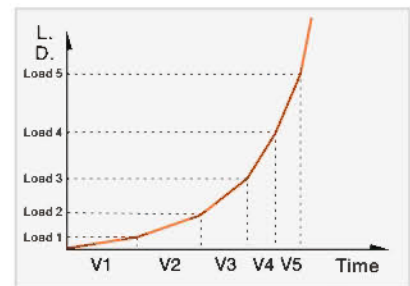
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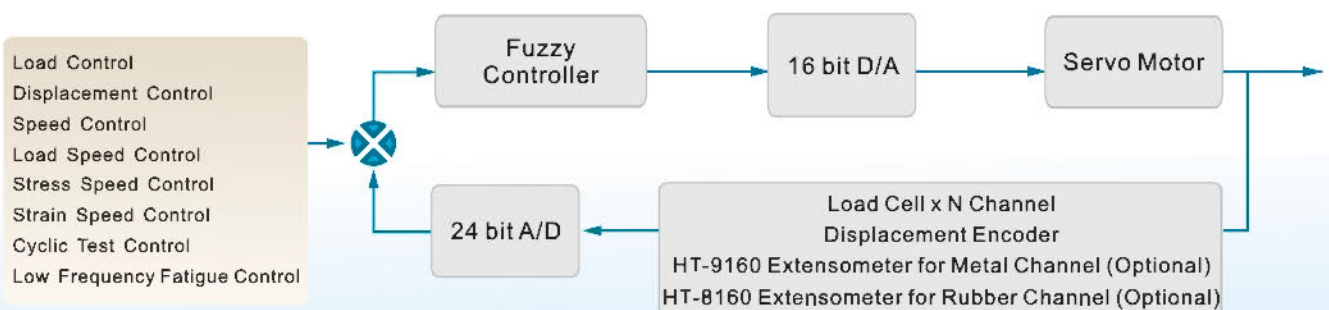


No. 11



No. 12

CONTROL FUNCTION : BLOCK DIAGRAM



HT-2101 Series

Electro-Hydraulic Servo Universal Testing Machines

(Front-Opening Hydraulic Grips)

ISO-7500- 1-2004, GB/T 16826-2008



HT-2101
(Front-Opening Hydraulic Grips)

HT-2101 Series

SPECIFICATIONS

HT-2101 Series		H - 300	H - 500	H - 600	H - 1000	H - 2000					
Capacity	kN	300	500	600	1000	2000					
Load Accuracy	Class 1 ± 1% or (optional, Class 0. 5 ± 0. 5%)										
Force Resolution	1/200,000 above (Hung Ta HT-0906 Interface Card)										
Unit	Load	N, kN, lbf, kgf, tf									
	Displacement	mm, cm, inch									
Tensile (mm) (Included Cylinder Stroke)	Max, Grip Span	600	600	600	800	900					
	Round Fixture	Ø 8 ~ Ø 25 Ø 20 ~ Ø 50	Ø 8 ~ Ø 25 Ø 20 ~ Ø 50	Ø 8 ~ Ø 25 Ø 20 ~ Ø 50	Ø 10 ~ Ø 40 Ø 30 ~ Ø 70	Ø 9 ~ Ø 30 Ø 20 ~ Ø 60 Ø 50 ~ Ø 90					
	Plate Fixture	0 ~ 40 (width 50)	0 ~ 50 (width 50)	0 ~ 50 (width 50)	0 ~ 40 (width 70)	0 ~ 45 (width 90)					
Compression (mm) (Included Cylinder Stroke)	Max. Compress Distance	600	600	600	800	900					
	Platen Size	Ø120	Ø120	Ø120	Ø160	Ø220					
Transverse Bending (mm) (Included Cylinder Stroke)	Support Diameter x width	450	450	450	800	900					
	Support Diameter x width	Ø50 x 120	Ø50 x 120	Ø50 x 120	Ø50 x 160	Ø70 x 200					
	Punch Tip Radius x width	R15 x 120	R25 x 160	R25 x 160	R25 x 160	R35 x 160					
Loading Speed (mm/min) (60 Hz)		≤100 max.	≤100 max.	≤100 max.	≤70 max.	≤70 max.					
Ram Stroke (mm)		250	250	250	250	250					
Crosshead Speed (mm/min)		300	300	300	150	150					
Effective Testing Space (mm) (WxD)		500 x 520	500 x 520	500 x 520	700 x 750	690 x 820					
Power	3-Phase / 220V / 60 Hz or 3-Phase / 380 ~ 415V / 50 Hz										
Power Consumption		4.0 kVA	4.0 kVA	4.0 kVA	5.0 kVA	8.0 kVA					
Dim. (WxDxH) (mm)	Main Frame	1120x620x2350	1800	1120x620x2350	1800	1120x620x2350	1800	1330x750x3150	5000	1400x960x3250	6800
Weight (kg)	Control Box	1200x670x1000	300	1200x670x1000	300	1200x670x1000	300	1200x670x1000	350	1200x670x1000	350
Standard Accessories	Jaw holder, Jaw plate (for plane), Jaw plate (for round)										
Optional Accessories	Bending Fixture, Compression, Extensometer, Wire -rope jig, Furnace										

Standard Accessories



▲Jaw Holder



▲Jaw Plate (for plane)

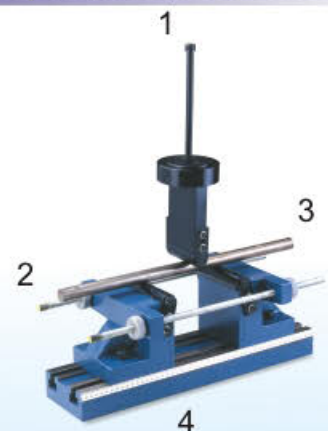


▲Jaw Plate (for round)



▲Compression

Optional Accessories



▲ 1 Bending Fixture
2. 3. 4. Bending Table

HT-2101 HT-9501 Series

Electro-Hydraulic Servo Universal Testing Machines

ISO-7500- 1-2004, GB/T 16826-2008

Electro-Hydraulic Servo Universal Testing Machines

- ◆ With wide range of function and application, suitable for research, inspection, testing for the field of metal, rubber, plastic, leather, cable and wire, textile, fiber, paper, PE, construction materials, electric appliance, petrochemical, transportation, automobile, package, polymer, aerospace...etc.
- ◆ Conforming to many international standards like ASTM E4, ASTM E8-04, GB/T 232-2010, GB/T 7314-2005, ISO 7500-1-2004, DIN 5122, GB/T 16826-2008, GB/T 228-2010, JIG139-1999, JIS Z22410-1998, EN1002-2, JIS B7721 / B 7733, ISO-6892-1 2009 (E), CNS 9471 / 9470
- ◆ Close-loop fuzzy servo control match high precision servo valve.
- ◆ Large front open gate, easy maintenance.
- ◆ High quality steel plate, well-design, protect oil tubes and cables, let operator use conveniently and safely.
- ◆ High comprehensive software application, control machines, data base and results storages and convent print testing results as report
- ◆ Quality control, raw material inspection, quality warranty, production inspection, foundational study, material testing, application study, force application study.

Functions & Features

- ◆ High Precision, High Stiffness Structure.
FDC55 high strength casting material, driving screws and high stiffness axle materials, strong structure, high stability, long durability. Hydraulic system adopts high efficiency pump and high conversational servo valve, with excellent filtration. Cooling system matches special oil tank makes operations safe, stable and precise.
- ◆ High Accuracy, Super Control Ability
Adapt high accuracy loadcell, accuracy of load reach $\pm 0.005\%$, with stable load induction, high accuracy, high stability. No gap shaft production procedure. Force Accuracy reaches first class, ± 0.5 class, displacement resolution up to ± 0.5 , conform the international testing standard.
- ◆ High Efficiency, Easy Operation
High accuracy motor, transfer force stability, durability and safety, remote control convenient, crosshead adjustment safety.
- ◆ Standardization, Modularization
Standardized jaw holder specification, available to replace economic, convenient and speedy, Mechanical hydraulic grips easy and convenient to interchange, available for compression, bending and shear.
- ◆ Multi-Function, High Performance
Multi-Purpose Application test program, available to test various material and products, for conducting tensile testing, compression, shear, peeling and displacement measurement, and also available to be equipped with high/low temperature equipment for environmental testing.

High Precision, High Stiffness Structure

- ◆ Method Unit :
 - a. Computer Servo hydraulic system (equipped : Standard computer set, LCD monitor, Color inkjet printer)
 - b. Load signal from high precision loadcell
 - c. Displacement signal from high sensor device.
 - d. Signal processed and amplified by low-noise high linearity electronics.
 - e. Accuracy rate : within $\pm 1\%$, Force resolution rate : 1/200000 above
- ◆ Accuracy of load : $\pm 1\%$
- ◆ Real time display for various kinds of graphs available :
 - a. Load-Displacement
 - b. Load-Time
 - c. Displacement –Time
 - d. Stress – Strain
 - e. Load-Extensometer
- ◆ Control Model :
 - a. Fixed Displacement
 - b. Fixed Velocity
 - c. Fixed Load
 - d. Constant load Speed
 - e. Constant Strain Speed
 - f. Constant Stress Speed
 - g. Constant Stress transfer to Strain.
- ◆ Setting of testing parameters : database modularized.
- ◆ Display of testing parameter: value and real-time curve (load, stroke or elongation available to be displayed and automatically detect yield point and switched by computer..)

HT-9501 Series

Electro-Hydraulic Servo Universal Testing Machines

ISO-7500- 1-2004, GB/T 16826-2008



HT-9501 - H1000

HT-9501 Series

HT-9501 Series

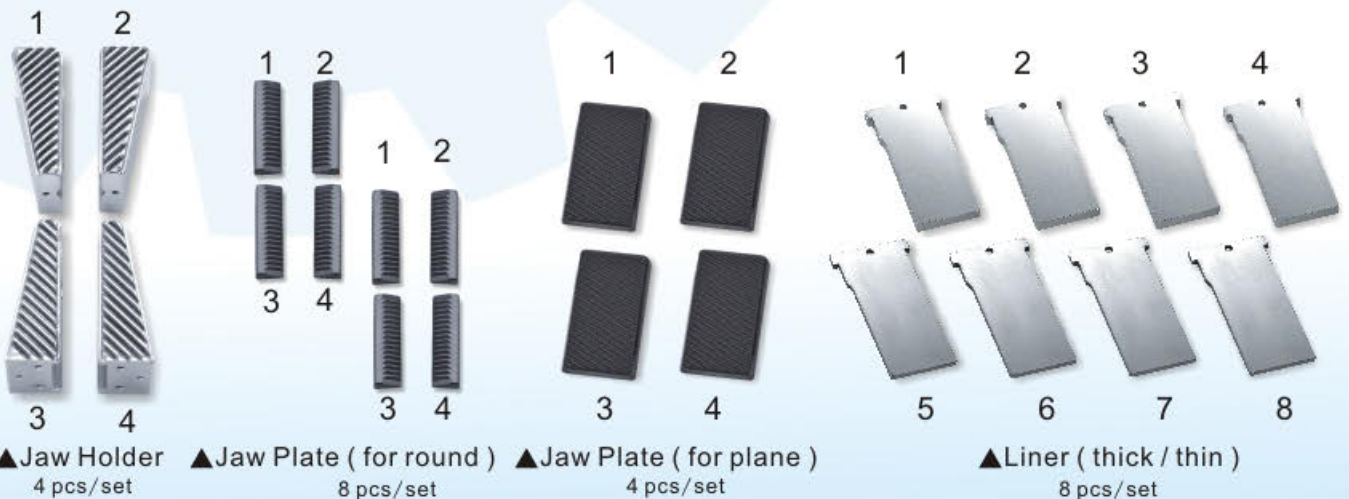
Electro-Hydraulic Servo Universal Testing Machine

ISO-7500- 1-2004, GB/T 16826-2008

SPECIFICATIONS

HT-9501 Series		H - 300		H - 500	
Capacity	kN	300 kN		500 kN	
Load Accuracy					
Force Resolution					
Unit	Load				
	Displacement				
Tensile (mm) (Included Cylinder Stroke)	Max, Grip Span	700		700	
	Round Fixture	Ø8 - Ø25 Ø20 - Ø50		Ø8 - Ø25 Ø20 - Ø50	
	Plate Fixture	0 - 50((width 50)		0 - 50 (width 50)	
Compression (mm) (Included Cylinder Stroke)	Max. Compress Distance	700		700	
	Platen Size	Ø120		Ø160	
Transverse Bending (mm) (Included Cylinder Stroke)	Support Diameter x Width	450		450	
	Support Diameter x Width	Ø30 x 120		Ø50 x 120	
	Punch Tip Radius x Width	R15 x 120		R25 x 120	
Loading Speed (mm/min) (60 Hz)		≤100 max.		≤100 max.	
Ram Stroke (mm)		250		250	
Crosshead Speed (mm/min)		300		300	
Effective Testing Space (mm) (WxD)		500 x 520		500 x 520	
Power		3Ø / 220 V / 60 Hz or 3Ø / 380 - 415 V / 50 Hz			
Power Consumption		3.0 kVA		3.0 kVA	
Dimension (WxDx H) (mm)	Main Frame	1120x620x2050	1400	1120x620x2050	1400
Weight (kg)	Control Box	1200x670x1000	300	1200x670x1000	300
Standard Accessories					
Optional Accessories		Ball-Seat Compression Platen,			

Standard Accessories



H - 1000		H - 2000		H - 3000		H - 4000	
1000 kN		2000 kN		3000 kN		4000 kN	
Class 1 ±1% or (optional, Class 0.5 ±0.5%)							
Single 1/200,000 above (Hung Ta HT-0906 Interface Card)							
N, kN, lbf, kgf, tf							
mm, cm, inch							
800		800		1000		1400	
Ø9 - Ø25 Ø25 - Ø70		Ø9 - Ø26 Ø25 - Ø50, Ø50 - Ø70		Ø30 - Ø75 Ø60 - Ø100		Ø30 - Ø75 Ø75 - Ø120	
0 - 65 (width 65)		0 - 60 / 50-90 (width 90)		0 - 60 / 50-100 (width110)		0 - 60 / 60-115 (width120)	
800		900		1000		1100	
Ø160		Ø220		Ø300		Ø300	
800		1000		1000		1000	
Ø50 x 160		Ø70 x 220		Ø80 x 250		Ø80 x 250	
R25 x 160		R35 x 160		R40 x 250		R40 x 250	
≤70 max.		≤70 max.		≤70 max.		≤70 max.	
250		250		300		350	
150		150		150		150	
600 x 750		690 x 820		775 x 1000		1070 x 1150	
3Ø / 220 V / 60 Hz or 3Ø / 380 - 415 V / 50 Hz							
4.0 kVA		7.0 kVA		10 kVA		11 kVA	
1320x750x2400	3300	1550x900x2850	6500	1650x1100x3450	10000	2200x1480x4600	18000
1200x670x1000	300	1200x670x1000	400	1200x670x1000	450	1200x670x1000	500
Jaw Holder, Jaw Plate (for plane), Jaw Plate (for round), Compression Platen							
Bending Table, Two-point Extensmeter, Wire -rope Jig, Furnace, Hydraulic Grips							

Optional Accessories



1

2



1

2



1

2



1

2

3

4



▲ Compression Platen 2 pcs/set

▲ Fastening Handle 2 pcs/set

▲ Pinion Shaft 2 pcs/set

▲ 1. Bending Head
2. 3. 4. Bending Table

▲ Hydraulic Grips

HT-8747 Series

Thermal Testing Chamber Series

(Optional)



HT-8747 D, E Type High Temperature Chamber

A / B / C Type High and Low Temperature Chamber (HT-8747)
HT-2101/HT-9501/HT-2402

HT-8747 Series	HT-8747A	HT-8747B	HT-8747C	HT-8747D	HT-8747E
Temperature Range	Rt ~ + 200°C	-30 ~ + 200°C	-50 ~ + 200°C	+30 ~ + 800°C	Rt ~ + 1100°C
Inside Dimension (W x D x H)	20 x 30 x 60 cm			Ø8 x 30 cm	Ø8 x 30 cm
Outside Dimension (W x D x H)	40 x 82 x 82 cm	40 x 100 x 90 cm	40 x 120 x 90 cm	Ø35 x 40 cm	Ø35 x 40 cm
Method of Heat-up or Cool-down	Heat Type	Heat Type/Cooling Type		Heat Type	
Temperature Control	PID automatic temperature controller with digital temperature indicator				
Applied Models	Suitable for HT-2101, HT-9501, HT-2402 type series tensile tester				
Power	1-Phase 220V				

HT-8160 / HT-9160 HT-9161

Series

Extensometer



HT-8160 series Extensometer can be bought with HT-8747 Thermostat Testing Chamber at the same time, but unable to use both together.



HT-9161 series Extensometer
(Made in USA)

Two-Point Extensometer Series

HT-8160 series – Suitable for model HT-2402 series

HT-9160 series – Suitable for model HT-2101, HT-9501, HT-2402

Model	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 Length (mm)	20 ~ 800		25	5	25	5	25
Resolution (mm)	0.004		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, HT-9160 series suitable for working at RT ~ 50 °C HT-9161 Series, Temp. range -265 °C ~ +200 °C (LHT) Temp. range -10 °C ~ +100 °C (ST)				



HT-8160 Series



HT-9160 Series

HT-8296 Series *Electro-Hydraulic Servo Horizontal Tensile Testing Machines*



HT-8296 Series Main Frame

Application

- ◆ Suitable for testing longer specimens like wire, cable, connecting rod, steel wire, steel cable, steel link, metal chain, chain assembly, spring, webbing, rope, anchor chain, hook, piping, metal fasteners...etc.
- ◆ Confirming to most international standards like ISO 7500-1, EN 10002-2, BS 1610, DIN 5122, ASTM E4, JIS 7721 / B 7733, GB 228-2010, JJG 139-1999, CNS 2111, 9471, 9470...etc.

Measurement Device

- ◆ Hydraulic control system or servo control hydraulic system. Apply high accuracy load cell.
- ◆ Testing gain force automatic switching function; if the capacity reach 100%, it automatically witch the large capacity.
- ◆ Accutacy : $\leq \pm 1\%$, Load Resolution : 1/200,000 above
- ◆ Display a variety of experimental curves : Load-Elongation, Load-Time, Elongation-Time, Stress -Strain

Control System

- ◆ Super powerful control function, with high intelligent computer system
- ◆ Closed-loop servo hydraulic control system
- ◆ Control Mode :
 1. Fixed displacement
 2. Fixed velocity
 3. Fixed load
 4. Constant load speed
 5. Constant strain speed
 6. Constant stress speed
 7. Stress > Strain speed
 8. Fixed velocity > Load
 9. Fixed velocity > Displacement
- ◆ Fixed velocity control range : Origin point ~ Max. stroke setting range : 0.5 ~ 80 mm/min
- ◆ Control mode of operation : Auto / Manual function available to switch off
- ◆ Emergency shut down button & overload protection (auto stop) functions equipped
- ◆ Setting of testing parameters : Database modularized
- ◆ Fixed velocity load control range : Full capacity 5 ~ 100% (F.S.)

Data Processing System

- ◆ Data acquisition and data-analysis / Clarification.
- ◆ Available to backup and modify the write / read path of database.
- ◆ SI unit and other conversion unit : N, kN, g, kg, ton, lb for force ; mm, cm, inch for length.
- ◆ Self-defined testing modules based upon any kind of standard test norms.
- ◆ Software password security protection (optional)
- ◆ X BAR-R engineering diagram and SQC quality control diagram (optional)
- ◆ Various kinds of software providing data manipulation and analysis.

Customers List for Reference

- ◆ Chang Tai Enterprises
- ◆ Fujikura Federal Cables (Malaysia)
- ◆ Ho Chi Electric Cables
- ◆ Ta Fang Ropes
- ◆ Beaver Sales Pty Ltd (Australia)
- ◆ Chung Hwa Cable
- ◆ PT Sicamindo
- ◆ Mecon, India
- ◆ Yuen Hui Industries
- ◆ Ming Long Enterprise
- ◆ Red Wood Industries
- ◆ Sunrise Technology
- ◆ Tateng Enterprise
- ◆ Kinizi Thailand
- ◆ Binsoon Enterprise
- More customers reference

Specification

HT-8296 Series	HT-8296H30	HT-8296H50	HT-8296H100	HT-8296H200	HT-8296H300	HT-8296H500	HT-8296H1000	HT-8296H1200	HT-8296H1500	HT-8296H2000	
Capacity	300 kN	500 kN	1000 kN	2000 kN	3000 kN	5000 kN	10 MN	12 MN	15 MN	20 MN	
Load Accuracy	Class 1 $\pm 1\%$ (or optional Class 0.5 $\pm 0.5\%$)										
Load Resolution	1/200,000 above (apply Hung Ta HT-0906 Interface card system)										
Control Model	A Type : HT-8296 Servo Hydraulic Control, B Type : HT-8296C Manual Hydraulic										
Testing Length (m)	Standard is 4 meter, other length by customize										
Standard Section Length for Addition	Each section is 5.5 meter, length of front pin hold to rear pin hold is 0.5 meter (or upon request)										
Cylinder Stroke	500 mm / 750 mm / 1 m / 1.5 m / 2m (Depends on the elongation of testing sample x testing length – optional)										
Testing Speed (mm / min)	Metal: Max 80 mm/min, Rope or Ribbon Max. 150 mm/min (Special speed can be specified)										
Effective Testing Width (mm)	500		600		800		1000		1100		1500
Effective Testing Height (mm)	500		600		700		800		900		1200
Hydraulic Power System	A Type : Servo Control or B Type : Electromagnetic Control (Selectable)										
Electronic Control System	A Type : HT-0906 Hung Ta Software, PC Control / B Type : HT-9635A Indicator										
Protection Cover	A Type : Sliding moving cover or B Type : Hydraulic type or Open type (Selectable)										
Limit Device	Upper and lower limit device for hydraulic cylinder										
Tensile Grip (optional)	For metal & wire samples: Wedge holder with Jaw plate for plane and rod For webbing & rope: Pin-thru holder with pins of $\varnothing 50$ mm (or upon request) For others: special design and manufacture as per actual size of test samples										
Moving Space for Rear Grip Stand (mm)	Standard 500mm (Customize: for special request)										
Control Box (WxDxH) (mm)	1200 x 670 x 1000										
Power	3-Phase / 220V / 60 Hz or 3-Phase / 380 ~ 415V / 50 Hz										

HT-8296 Control Box

A Type : HT-8296 Electro-Hydraulic Servo
Horizontal Material Testing Machine
(Control unit and Machine body)



- ◆ Stable control functions
- ◆ Closed-loop servo hydraulic high intelligent control system
- ◆ 24 bit interface system HT-0906

B Type : HT-8296C Micro-computer
Hydraulic Horizontal
Material Testing Machine
(Control unit and Machine body)



- ◆ Forward/back loading control valve, easy operation
- ◆ Non servo hydraulic system
- ◆ HT-9635A Indicator

HT-8391 Series

Computer-Controlled Servo Hydraulic Concrete Compression Testing Machines

HT-8391PC

Computer-Controlled Servo Hydraulic Concrete Compression Testing Machines



HT-8391C

Micro-Computer Concrete Compression Testing Machines



The machine adopts the HT-8336 Low Profile High Precision Load Cell sensor for measurement :

HT-8391PC

- ◆ Specially designed for compression test of concrete. control and easy operation is the basic principle of design.
- ◆ High precision servo control and simple-operated program improves effectively the convenience and reliability of test.

- ◆ HT-8391C is the traditional hydraulic & manual control system with the digital indicator (available to display load & stress speed) can be selected as optional.

HT-8391PC & HT-8391C Main Frame

Capacity (kN)	1000 kN	1500 kN	2000 kN	3000 kN
Load and Accuracy	± 1 %			
Load Resolution	1/200,000 above (apply Hung Ta HT0906 Interface card system)			
Max. Vertical Clearance (mm)	340	340	340	400
Horizontal Clearance (mm)	330	330	380	380
Ram Stroke (mm)	50	50	70	70
Loading Speed	HT-8391C Indicator model available to display stress increasing rate HT-8391PC Computer model available to set 1.41 ~ 3.52 kg/cm ² /sec			
Return Speed (min/mm)	50			
Weight of Main Frame (kg)	700	700	900	1000
Dim. of Main Frame (cm)	55 x 45 x 145	55 x 45 x 145	63 x 46 x 160	63 x 46 x 160
Dim. of Control Box (cm)	120 x 67 x 100			
Power	3-Phase, 220 / 60 Hz or 3-Phase 380 ~ 415 V / 50 Hz			

- ❖ Optional accessory : 1. Compression, Compression platen, or spacer by customized.
- 2. SF-132B10 poisson ratio measurement apparatus.

Measuring compliance with

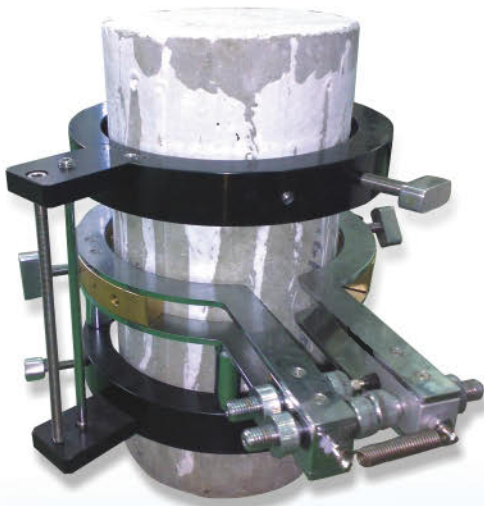
A. 2000 kN Computer servo hydraulic concrete compression machine conform standard as follow :

- CNS : 1232 ◆ Concrete column bending testing.
- CNS : 1233 ◆ Concrete bending testing (3 point loading)
- CNS : 1234 ◆ Concrete bending stiffness testing (center point)
- CNS : 1238 ◆ Concrete center dig and slice long shape method
- CNS : 3801 ◆ Concrete column hack stiffness testing
- CNS : 1010 ◆ Liquid concrete material bending testing
- CNS : 382 ◆ Common brick testing
- CNS : 13295 ◆ High pressure concrete brick testing
- ASTM : C469 ◆ Poisson Ratio(CLSM)

B. 200 kN Computer servo hydraulic concrete compression machine conform standard as follow :

- CNS : 1010 ◆ Liquid concrete material bending testing
- CNS : 1238 ◆ Concrete center dig and slice long shape method
- ASTM : D4832 ◆ Poisson Ratio(CLSM)

SF-132B10 Poisson Ratio Measurement apparatus



Control Unit

- ◆ Computer-Control Hydraulic Servo System
- ◆ High precision automatic control valve
- ◆ Control mode :
 - a. Constant speed ram stroke control :
Control range : ram return position ~ max.
Ram stroke speed setting range :
0.5 ~ 35 mm / min
 - b. Constant speed load control :
Control range : 5~100% of full scale load
Speed setting range : 0.1~2.0 full scale / min
(but up to specimen material)
 - c. Constant speed stress control :
1.41 ~ 3.52 (kg/cm²) / sec
 - d. Constant speed strain control :
Control range : 5 ~ 100% of full scale strain
Speed setting range : 0.1 ~50% / min
 - e. Fixed displacement control
 - f. Fixed load control

Note : Item with star mark are only available when L.V.D.T. displacement sensor is selected

- ◆ Setting of testing parameters :
database modularized
- ◆ Display of testing parameters :
value and real-time curve (load, stroke or elongation) available to be displayed and switched by computer
- ◆ Control mode of operation :
auto / manual function switchable
- ◆ Emergency shut down button & overload protection (auto stop) function equipment

Data-Processing System

- ◆ Data-acquisition and data-analysis / clarification
- ◆ Available to backup and modify the write / read path of data file
- ◆ Self-defined testing module based upon any kind of standard test norms (optional)
- ◆ Software password security protection (optional)
- ◆ XBAR-R engineering diagram and SQC quality control diagram (optional)
- ◆ Various kinds of softwares providing data manipulation and analysis (optional)

HT-8041A

Charpy Impact Testing Machines

Charpy Impact Testing Machines

ASTM D-256, JIS K-7111, K-6911, K-6743, CNS-10425, B7255

- ◆ This tester is used to determine the energy required to break plastics, composites, and metallic materials. A notch is made at the center of a rectangular standard test specimen. Both ends are used as supports. Impact force is applied by releasing the pendulum. The energy required to break a specimen is calculated by the angle which the specimen swings up corresponding to the residual energy.



Optional Accessories



1. HT-9635S LCD Indicator
2. Computer System (PC)
3. Model HC-50 ~ HC-5 Equipped Automatic Pendulum Lift System

Specification

Model	HC-50	HC-30	HC-10	HC-5	HC-1.5	HC-1.0	HC-0.5
Capacity	50 kg-m 500J	30 kg-m 300J	10 kg-m 100J	5 kg-m 50J	150 kg-cm 15J	100 kg-cm 10J	50 kg-cm 5J
Distance between center of Hammer Revolving axis and strike point (mm)	850	750	600	600	400	400	230
Radius of Hammer knife edge _(JIS) _(ASTM) (mm)	R2 R8	R2 R8	R2 R8	R2 R8	2	2	2
Angle of Hammer knife edge	30°	30°	30°	30°	30°	30°	30°
Lift angle of Hammer	140°	140°	140°	140°	150°	150°	150°
Weight of Hammer (kg)	37	26	11	8	2.6	1.8	1.3
Speed of Hammer at Impact point (m/sec)	5.5	5	4.5	4.2	3.8	3.8	2.9
Dimension (WxDxH) (cm)	50x110x144	46x88x130	39x75x110	39x75x110	38x58x79	38x58x79	28x40x56
Weight (kg)	400	300	250	200	70	65	50

◆ Optional : unit of Joule is available

HT-8041B

IZOD Impact Testing Machines



IZOD Impact Testing Machines

ASTM D-256, JIS K-7111, K-6911, K-6743, CNS-10425, B7255

- ◆ This tester is used to determine the energy required to break plastics, composites, and metallic materials. A notch is made at the center of a rectangular standard test specimen. Both ends are used as supports. Impact force is applied by releasing the pendulum. The energy required to break a specimen is calculated by the angle which the specimen swings up corresponding to the residual energy.

Optional Accessories



1. HT-9635S LCD Indicator
2. Computer System (PC)
3. Model HI-50 ~HI-5
Equipped Automatic Pendulum Lift System

Specification

Model	HI-50	HI-30	HI-17	HI-10	HI-5	HI-1.5	HI-1.0	HI-0.5
Capacity	50 kg-m 500J	30 kg-m 300J	17 kg-m 170J	10 kg-m 100J	5 kg-cm 50J	150 kg-cm 15J	100 kg-cm 10J	50 kg-cm 5J
Distance between center of Hammer Revolving axis and strike point (mm)	1322	1250	1220	600	600	400	400	310
Radius of Hammer knife edge _{(JIS) (ASTM)} (mm)	1	1	1	1	1	0.8	0.8	0.8
Angle of Hammer knife edge	75°	75°	75°	75°	75°	75°	75°	75°
Lift angle of Hammer	60°	60°	60°	90°	90°	150°	150°	150°
Weight of Hammer (kg)	110	90	40	11.5	11.5	2.6	1.8	1.3
Speed of Hammer at Impact point (m/sec)	3.6	3.5	3.5	3.4	3.4	3.8	3.8	3.35
Dimension (WxDxH) (cm)	65x170x220	60x170x220	60x170x200	50x75x140	39x75x110	38x58x79	32x50x79	32x50x65
Weight (kg)	600	400	300	250	200	70	65	50

◆ Optional : unit of Joule is available

HT-8041B

HT-8120

Rotary Bending Fatigue Testing Machines

HT-8120 Rotary Bending Fatigue Testing Machines

This testing machine is used for fatigue strength tests of metals or various industrial materials and assures easy operation. Furnished two hollow rotation shafts on the left and right sides of strongly built steel frame base with accelerating high speed rotation to the test specimen fixed on both ends, also applied loads to the both ends of hollow rotation shaft then effect uniform bending strength to the test specimen.



Dimension of Test Specimen

10 kgf-m	20 kgf-m	30 kgf-m
45 kgf-m	60 kgf-m	100 kgf-m

Specification

Model	HT-10	HT-20	HT-30	HT-45	HT-60	HT-100
Max. Capacity	10 kgf-m	20 kgf-m	30 kgf-m	45 kgf-m	60 kgf-m	100 kgf-m
Rotation		2900 rpm (50 Hz) 3500 rpm (60 Hz)		1500 rpm 2500 rpm	1500 rpm 2500 rpm	1000 rpm 2000 rpm
Counter	10 ⁷					
Length of Loading Lever	200 mm	250 mm	300 mm	400 mm	400 mm	500 mm
Loading Weights	Combined 100 kg Min. Over 2 kg	Combined 160 kg Min. Over 2 kg	Combined 200 kg Min. Over 2 kg	Combined 225 kg Min. Over 5 kg	Combined 300 kg Min. Over 5 kg	Combined 400 kg Min. Over 10 kg
Motor	0.4 kVA	0.75 kVA	1.5 kVA	1.5 kVA	2.2 kVA	3.7 kVA
Automatic Stop	Auto Counter Stop					
Dim. (WxDxH)(mm)	1450x500x1200			2400x800x1300		2800x1000x1600
Weight (kg)	290 kg	350 kg	390 kg	110 kg	1200 kg	1800 kg
Power	1-Phase / 220 V, 50 / 60 Hz or (Optional 3-Phase / 380 ~ 415 V / 50 Hz)					

❖ Optional : High Temperature Chamber

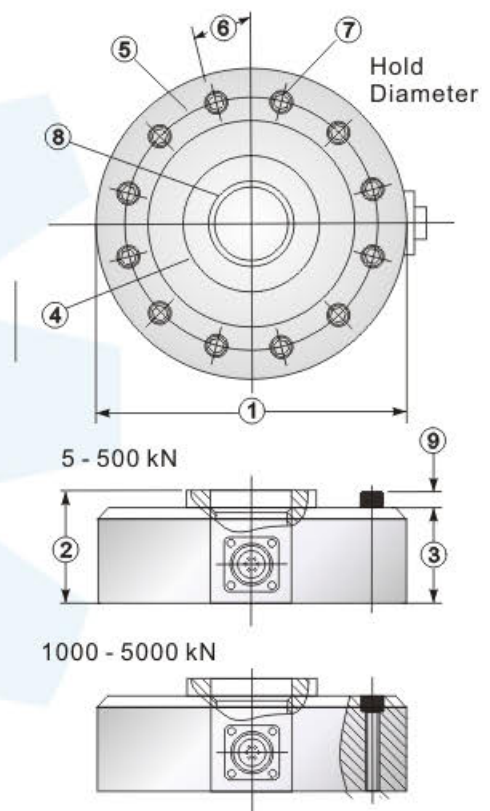
HT-8336 Series *Low Profile High Precision Load Cell*

Low Profile High Precision Load Cell

- ◆ With excellent linearity owing to small change of structural area.
- ◆ With excellent symmetry, available to withstand a large eccentric or lateral load.
- ◆ Low profile, with low deflection under load
- ◆ With even heat compensation
- ◆ Material with high stiffness and low deflection, with better overload protection
- ◆ Tensile and compression type
- ◆ Wide range of measuring 5 ~ 5000 kN

Specification

Model	HT-8336
Capacity (kN)	5, 10, 20, 50, 100, 200, 300, 500, 600, 1000, 2000C, 2000 U, 3000, 5000
Average Error	$\leq \pm 0.05\% \text{ FS}$
Output Sensitivity	$2.0 \text{ mv} \pm 0.03 \text{ mv/v}$
Non-linearity	$\leq \pm 0.05\% \text{ FS}$
Hysteresis	$\leq \pm 0.03\% \text{ FS}$
Repeatability	$\leq \pm 0.02\% \text{ FS}$
Zero Balance	$\pm 0.05\% \text{ FS}$
Input Resistance	$350 \Omega \pm 5 \Omega$
Output Resistance	$350 \Omega \pm 5 \Omega$
Temperature Range Compensated	$-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
Proper Temperature Range	$-30^{\circ}\text{C} \sim +65^{\circ}\text{C}$
Safe Overloading	120 % FS
Limit Overload Range	150 % FS



No. \ Capacity	5, 10, 20, 50	100, 200	300, 500, 600	1000, 2000C	2000U	3000	5000
1	104.8	154.0	203.2	280.0	304.8	393.7	520.7
2	35.4	45.0	63.5	89.3	114.3	139.7	158.8
3	32.0	42.0	57.1	76.2	108.0	203.2	152.4
4	34.0	58.0	95.5	122.5	144.3	196.3	267.9
5	89.0	130.0	165.1	228.6	241.3	322.1	419
6	22.5°	15.0°	11.25°	11.25°	9°	7.5°	6.43°
7	7.1 8 places	10.5 12 places	13.5 16 places	16.8 16 places	20.1 20 places	23.9 24 places	27 24 places
8	M20 x 1.5-4H	M33 x 2-4H	M42 x 2-4H	M72 x 2-4H	M90 x 3-4H	M120 x 4-4H	M150 x 4-4H
9	8	10	12	n/a	n/a	n/a	n/a

◆ U = Tensile & Compression, C = Compression

Unit : mm

HT-8336 Series



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