

Servo-hydraulic Universal Testing Machine | HUT Type C

Load Frame Configuration:

6 columns, servo-controlled hydraulic

Capacity:

600kN, 1000kN

Test Space:

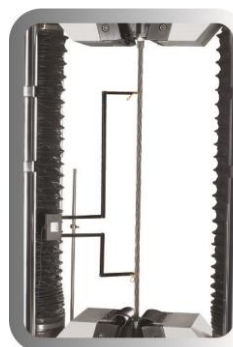
Dual zone (tension on top, compression on bottom)

Typical specimens:

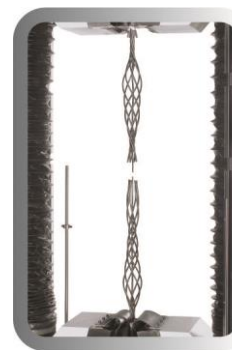
Fasteners, rebar, chain, welds, castings, **stranded steel wire**

Load frame

- Specially designed longer jaw face for tensile test of stranded steel wire
- Lead screw driven crosshead to adjust the test space
- High-Stiffness 6-column load frame design incorporates 3-position crosshead, adjustable specimen positioning, precision guide columns, thick crosshead and base beam minimizes load frame stored energy while producing reliable, stable, accurate load, strain and modulus values.
- Ergonomically designed load frames ensure safety, reduce operator fatigue, and provide the highest level of flexibility.
- Standard Dual Zone Test Space for reducing setup time
- "Quick Return" hydraulic valve for higher throughput
- Automatic limit checking for crosshead position, overload, over temperature, over voltage, etc.
- The system can return automatically, the oil cylinder can return the original position via manual or automatically after finishing testing
- Positive specimen holding is ensured by the wedge action of hydraulic operated grips
- Imported encoder mounted on the seat is for position measurement of crosshead with high accuracy
- Imported servo valve provides high stability and reliability



Extensometer



Broken specimen

Load cell

1. Use strain gauge load cell technology to measure the force being applied to specimen. The load cell is located in the lower grip and is used to directly measure tensile force.
2. High precise load cell measures and captures sensitively tension and compression force, high accuracy load measurement resolution reaches 1/350000 with no steps.
3. Famous brand load cell ensures high precision and repeatability.

Controlling system – DTC-350

1. Closed loop control of stress, strain and displacement.
Control loops can switch automatically and smoothly. Control algorithm adopts advanced neural element self-adapting PID. Neural element has ability of close to any non-linear function , simple structure and learning algorithm. It can adapt changing of control object by changing its own synapse weighting and distinguish parameter on line, rebuild object model on line.

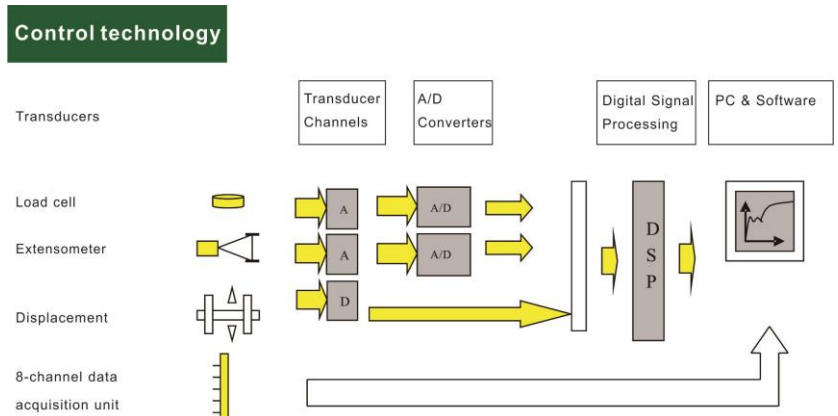


2. Control system based on DSP
DSP, the professional CPU and RISC, is used as control chip of the products. The chip has many functions, such as 40MIPS, 32-digit fixed point, vector control, A/D exchange, position capturing , etc. It is a CPU widely used in industry controlling and suitable to be IC of our products.

3. USB 1.1 communication
Data exchange between hardware and software via USB 1.1 interface and velocity of 12Mb/s. USB is main direction of development of communication, which has merits of high communication velocity, variety of communication mode(such as controlling , breaking, batch, real time ,etc.), and will be the main mode of communication.

4. Data acquisition system and position capturing system. Data acquisition system consists of 8 channels of 24 bit A/D exchange; effective resolution is 1/350000 with non-step in full range . Exchange velocity and gain are programmable on line. The products contain 3

channels of encoder position capturing system permitting photo-electric orthogonal code impulse. Frequency can reach 5 MHZ, which has functions of correcting, direction identifying and number-counting.



Two steps to start testing: select a project, press start

Standard accessories

Name		Description	Quantity
Main machine	Load frame	Dual space	1 set
	Load cell	built-in the load frame	1 set
	Displacement encoder	NEMICON brand	1 set
	Motor and speed reducer		1 set
HPU	Oil tank	Volume: 75L	1 set
	Pump		1 set
	Servo Valve		1 set
	Valve manifold		1 set
	Cooling fan		1 set
	High pressure oil hoses		4 sets
Grips & Fixtures	Hydraulic tensile grip for stranded wire	Stranded wire diameter: $\Phi 9\sim\Phi 18\text{mm}$	1 pair
	Compression fixture	Platen: $\Phi 150\text{mm}$	1 pair
Controller		Model: DTC-350	1 set
Software		Testpilot, English version	1 set
Extensometer		Gauge length: 500mm, max travel: 25mm	1 set
Accessories	Maintenance tools		1 set
	Operation & Maintenance manual		1 set
	Software manual		1 set
	Warranty card		1 set
	Quality Certificate		1 set

Optional

Name	Description
Bending fixture	Span: 0~400mm, bending nose: $\Phi 36\text{mm}$, Support roller: $\Phi 36\text{mm}$
Jaw face	Jaws for round specimen: $\Phi 10\sim\Phi 40\text{mm}$
	Jaws for flat specimen: 2~30mm

Prepared by customer:

- The anti-wear hydraulic oil (N46, 75L) shall be purchased by customer at local market.
- The foundation work must be finished before UTM delivered 14 days.
- Computer and printer should be prepared by customer

Shipping information

Model	Crated dimension (mm)	Crated weight (kg)
HUT605C	3200X1110X1035	3300
HUT106C	3550X1360X1130	5500
HPU (hydraulic power unit)	1430X850X1180	380

Specifications:

Model	HUT605	HUT106
Type	C	
Capacity (kN)	600	1000
Calibration accuracy	Class 1 / Class 0.5	
Force accuracy	Better than $\pm 1\% / \pm 0.5\%$	
Force range	1% ~ 100%FS	
Extension range	1% ~ 100%FS	
Extension accuracy	Better than $\pm 1\% / \pm 0.5\%$	
Extension resolution	1/350000 of max extension	
Actuator (piston) speed (mm/min)	0 ~ 140	0 ~ 100
Force loading speed	0.02% ~ 2% FS /s	
Column number	6	6
Column spacing (test space width) (mm)	410	430
Maximum tension space (mm)	1100	1100
Maximum compression space (mm)	950	950
Diameter of stranded steel wire	$\Phi 9.0 \sim \Phi 18$	$\Phi 9.0 \sim \Phi 18$
Diameter of round specimens (mm)	$\Phi 10 \sim \Phi 30$	$\Phi 10 \sim \Phi 45$
Thickness of flat specimens (mm)	2 ~ 20	2 ~ 40
Compression platens (mm)	$\Phi 150$	200×200
Actuator (piston) stroke (mm)	250	250
Frame dimension (LxWxH) (mm)	940×650×2940	1020×670×3050
Hydraulic Power Unit dimension (LxWxH) (mm)	1150×600×900	
Power consumption (kw)	6	6
Power supply	3-phase, 5-line, AC 380V, 50Hz	
Frame weight (kg)	3000	5000