

**Load Frame Configuration:**

6 columns, servo-controlled hydraulic

**Capacity:**

300kN, 600kN, 1000kN, 3000kN

**Test Space:**

Dual zone (tension on top, compression on bottom)

**Typical specimens:**

Fasteners, rebar, chain, welds, castings

**Load frame**

1. Worm-wheel driven crosshead ensures high accuracy movement to adjust test space
2. 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.
3. Ergonomically designed load frames ensure safety, reduce operator fatigue, and provide the highest level of flexibility.
4. Standard Dual Zone Test Space for reducing setup time
5. "Quick Return" hydraulic valve for higher throughput
6. Automatic limit checking for crosshead position, overload, over temperature, over voltage, etc.
7. The system can return automatically, the oil cylinder can return the original position via manual or automatically after finishing testing
8. Positive specimen holding is ensured by the wedge action of hydraulic operated grips
9. Imported encoder mounted on the seat is for position measurement of crosshead with high accuracy
10. Imported servo valve provides high stability and reliability



Various frames to satisfy your test needs from low force to high force



## Full complement of test accessories

Extensive range of accessories to meet test requirements in almost any application or industry: rebar, fasteners, chain, welds, castings, concrete and other building materials

- Tension grip
- Compression fixture
- Flexure fixture
- Rock shear fixture
- Concrete split fixture
- Fastener tension grip
- Extensometer
- Automatic extensometer
- others



## Load cell

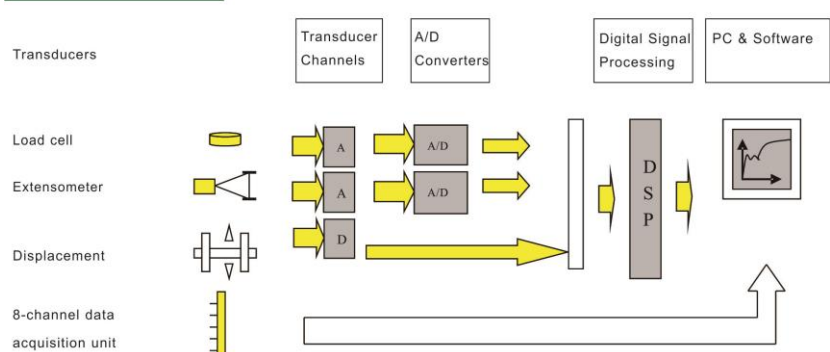
1. Use strain gauge load cell technology to measure the force being applied to specimen. The load cell is located in the lower grip and is used to directly measure tensile force.
2. High precise load cell measures and captures sensitively tension and compression force, high accuracy load measurement 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.

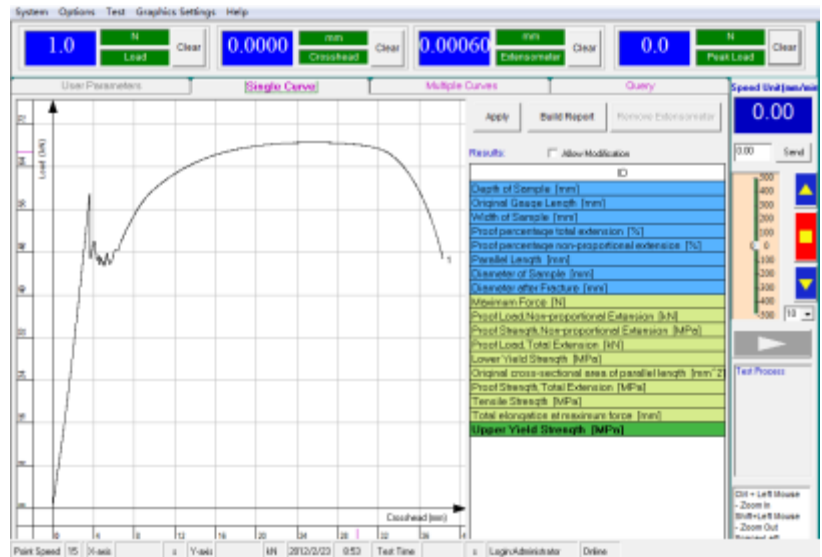


### Control technology



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

This software features a large, growing host of pre-packaged test methods to help you quickly and efficiently meet the requirements of global test standards such as ASTM, ISO, DIN, EN, BS, and more. Selected by an operator at runtime, these methods are crafted to meet the specific test flow, analysis and reporting requirements of industry standards across a range of specimen and test types. Pre-packaged test methods are available in a wide selection of bundled sets, including: Polymers



& Plastics, Metals, Construction Materials, Biomedical Products, Paper Products, Adhesives, foam, textiles and more.

- Versatile, easy-to-use TestPilot software with a large and growing library of standards-compliant test methods (ASTM, ISO, DIN, EN, BS, and more)
- Modular design permits easy upgrading
- Plenty of test standards are built in the library of the software for routine tests.
- User configured report: user can preset report template and include necessary information, like company information, statistics, and etc. Test report can export to Excel or Word.
- Powerful graphic function: real time display curves, like displacement-load, stress-strain, displacement-time, load-times, and others
- Powerful analysis function can calculate typical value and display on the curve, like Fm, ReL, ReH, Rp.
- Measurement unit: Users can select SI, or others, like N, kN, Kgf, lbf, Mpa, and so on, user can define the unit by themselves using formula.



Modular design is simple for operation and upgrading

# Servo-hydraulic Universal Testing Machine | HUT Type B

## Specifications:

Model	HUT305	HUT605	HUT106	HUT306
Type	Type B			
Capacity (kN)	300	600	1000	3000
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 ~ 180	0 ~ 140	0 ~ 90	0 ~ 80
Force loading speed	0.02% ~ 2% FS /s			
Column number	4	6	6	6
Column spacing (test space width) (mm)	405	430	430	950
Maximum tension space (mm)	530	750	800	1200
Maximum compression space (mm)	500	600	700	1000
Diameter of round specimens (mm)	$\Phi 10 \sim \Phi 32$	$\Phi 10 \sim \Phi 40$	$\Phi 15 \sim \Phi 60$	$\Phi 30 \sim \Phi 110$
Diameter of threaded steel (mm)	$\Phi 10 \sim \Phi 32$	$\Phi 10 \sim \Phi 36$	$\Phi 10 \sim \Phi 40$	-
Thickness of flat specimens (mm)	2 ~ 25	2 ~ 30	2 ~ 40	10 ~ 100
Compression platens (mm)	$\Phi 120$	$\Phi 150$	220x220	$\Phi 280$
Actuator (piston) stroke (mm)	150	200	250	300
Frame dimension (length × width × height) (mm)	940×610×2000	1120×770×2600	1250×920×2800	1320×950×4000
Hydraulic Power Unit dimension (length × width × height) (mm)	1150×600×900			
Power consumption (kw)	5	6	8	6.5
Power supply	3-phase, 5-line, AC380V, 50Hz			
Frame weight (kg)	2000	3000	5000	11000

# Servo-hydraulic Universal Testing Machine | HUT Type B

## Standard configurations:

	Name	Description	Quantity
Main machine	Load frame	Dual space, class 1	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		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	Compression fixture		1 pair
	Hydraulic wedge action tensile grip		1 pair
Controller		Model: DTC-350	1 set
Software		Testpilot, English version	1 set
Extensometer		Gauge length: 100mm, max travel: 10mm	1 set
Accessories	Maintenance tools	inner hexagon spanner 1 set Phillips screwdriver 1 set Open spanner 1 set	1 set
	Operation & Maintenance manual		1 set
	Software manual		1 set
	Warranty card		1 set
	Quality Certificate		1 set

## 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