INSIZE

MEASUREMENT SOLUTION PROVIDER

UNIVERSAL TESTING MACHINES

CATALOGUE NO. UTM-E01

MECHANICAL TESTING EQUIPMENT

We are deeply rooted in the testing machine industry, building a full-category product portfolio covering electronic universal testing machines, hydraulic universal testing machines, spring testing machines, fatigue testing machines, impact testing machines, torsion testing machines, special-purpose testing machines and process-specific testing machines, to meet the mechanical testing needs of diverse industries.

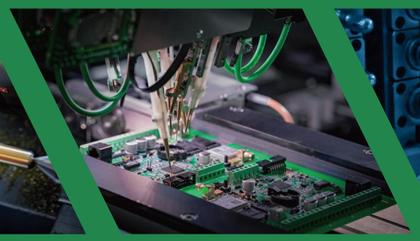
All products are manufactured in strict compliance with domestic and international standards including GB, ISO and ASTM. We select premium components for core parts and integrate intelligent control systems to realize test automation and digitization, ensuring precise and reliable data.

Electronic universal testing machines offer strong versatility for a wide range of applications. Hydraulic universal testing machines are ideal for high-capacity testing requirements. Special-purpose and process-specific testing machines are precisely tailored for niche and complex scenarios.

We provide one-stop solutions from material screening to quality control, supported by full-lifecycle services. Our goal is to help customers enhance product competitiveness and empower high-quality industrial development.

Application industries

Metal industry



Electronics industry

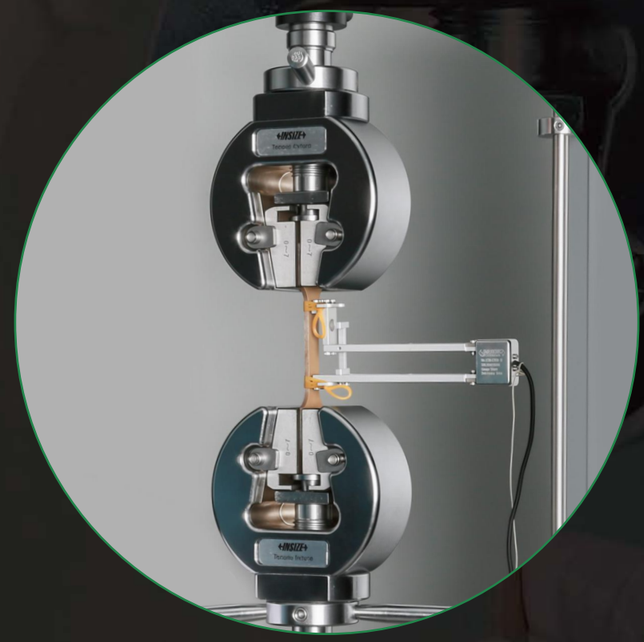
Plastics & Chemical industry

Composite materials industry

Automotive industry

Scientific research institutions & Universities

PRODUCT CATALOG

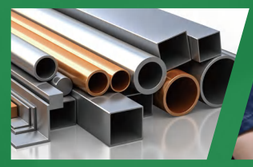


1 // ELECTRONIC UNIVERSAL TESTING MACHINE

The electronic universal testing machine is a high-precision mechanical property testing device driven by servo motors. It is widely used for testing the mechanical properties such as tension, compression, bending and shear for metals, plastics, rubber, composite materials and other materials. Equipped with a digital control system, it applies loads precisely, collects deformation data in real time and automatically generates stress-strain curves. It can output key mechanical parameters including elastic modulus, yield strength, tensile strength and elongation at break.

This equipment is extensively applied to quality control in manufacturing, scientific research at universities, engineering material verification and other key scenarios. As a mainstream testing instrument in the industry, it features differentiated technical designs. With optimized load accuracy, automation level and application adaptability, it delivers comprehensive testing capabilities covering tiny components to large structural parts.

Application industries



Metallic materials

Quality control in manufacturing

Engineering material verification

Scientific research
& Innovationin universities

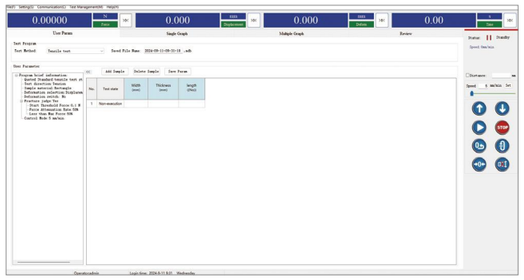
1. It can be equipped with accessories such as high-temperature furnaces, high and low temperature chambers, electronic extensometers, automatic extensometers, video extensometers and strain gauge instrument/strain meter to meet diversified testing requirements.

2. Customized mechanical, pneumatic and hydraulic fixtures are available to suit the testing requirements of various materials and products.
3. Customized testing space is provided to accommodate specimens of different sizes and diverse test scenarios.

Product name	Test standard	Test standard	Product description
 **UTM-Z series Single-column electronic universal testing machines**	ISO 527-1 Plastics-Determination of tensile properties-part 1: General principles ISO 527-2 Plastics-Determination of tensile properties-part 2: Test conditions for moulding and extrusion plastics ISO 604 Plastics-Determination of compressive properties ISO 178 Plastics-Determination of flexural properties ISO 1922 Rigid cellular plastics-Determination of shear strength ISO 7743 Rubber, vulcanized or thermoplastic-Determination of compression stress-strain properties ISO 34-1 Rubber, vulcanized or thermoplastic-Determination of tear strength-part 1: Trouser, angle and crescent test pieces ISO 37 Rubber, vulcanized or thermoplastic-Determination of tensile stress-strain properties ISO 1184 Plastics-Determination of tensile properties of films ISO 6383-1 Plastics-Film and sheeting Determination of tear resistance-part 1: Trouser tear method ISO 6383-2 Plastics-Film and sheeting Determination of tear resistance-part 2: Elmendorf method ISO 3036 Board-Determination of puncture resistance using a pendulum device ISO 13934-1 Textiles-Tensile properties of fabrics-part 1: Determination of maximum force and elongation at maximum force using the strip method ISO 13934-2 Textiles-Tensile properties of fabrics-part 2: Determination of maximum force using the grab method ISO 13937-2 Textiles-Tear properties of fabrics-part 2: Determination of tear force of trouser-shaped test specimens (Single tear method) ISO 8510-1 Adhesives-Peel test for a flexible-bonded-to-rigid test specimen assembly-part 1: 90°peel ISO 8510-2 Adhesives-Peel test for a flexible-bonded-to-rigid test specimen assembly-part 2: 180°peel ISO 1924.1 Paper and board-Determination of tensile properties-part 1: Constant rate of loading method ASTM D638 Standard Test Method for Tensile Properties of Plastics ASTM D695 Standard Test Method for Compressive Properties of Rigid Plastics ASTM D790 Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials	ASTM D732 Standard Test Method for shear Strength of Plastics by Punch Tool ASTM D412 Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers-Tension ASTM D882 Standard Test Method for Tensile Properties of Thin Plastic Sheeting ASTM F1306 Standard Test Method for Slow Rate Penetration Resistance of Flexible Barrier Films and Laminates ASTM D5053 Standard Test Method for Breaking Force and Elongation of Textile Fabrics (strip Method) ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers GB/T 1040 Plastics-Determination of tensile properties GB/T 1041 Plastics-Determination of compressive properties GB/T 9341 Plastics-Determination of flexural properties GB/T 328 Test methods for building waterproof sheets GB/T 2568 Test method for tensile properties of resin castings GB/T 529 Rubber, vulcanized or thermoplastic-Determination of tear strength (trouser, angle and crescent test pieces) GB/T 528 Rubber, vulcanized or thermoplastic-Determination of tensile stress-strain properties GB/T 2790 Adhesives-Test method for 180° peel strength between flexible and rigid adherends GB/T 2791 Adhesives-Test method for T-peel strength between flexible adherends GB/T 2792 Test method for peel strength of adhesive tapes GB/T 16491 Electronic universal testing machines GB/T 2611 General technical requirements for testing machines JJG 139 Tension, compression and universal testing machines JJG 475 Electronic universal testing machines	Designed specifically for material testing with low load requirements, this machine offers a maximum load capacity of 5kN. It is suitable for conducting tensile, compressive, flexural and other mechanical property tests on metallic and non-metallic materials. Adopting a single-column structure, the system features compact size and high rigidity.

Product name	Test standard	Test standard	Product description
 **UTM-E series Electronic universal testing machines**	ISO 527-1 Plastics-Determination of tensile properties-part 1: General principles ISO 527-2 Plastics-Determination of tensile properties-part 2: Test conditions for moulding and extrusion plastics ISO 604 Plastics-Determination of compressive properties ISO 178 Plastics-Determination of flexural properties ISO 1922 Rigid cellular plastics-Determination of shear strength ISO 7743 Rubber, vulcanized or thermoplastic-Determination of compression stress-strain properties ISO 34-1 Rubber, vulcanized or thermoplastic-Determination of tear strength-part 1: Trouser, angle and crescent test pieces ISO 37 Rubber, vulcanized or thermoplastic-Determination of tensile stress-strain properties ISO 1184 Plastics-Determination of tensile properties of films ISO 6383-1 Plastics-Film and sheeting Determination of tear resistance-part 1: Trouser tear method ISO 6383-2 Plastics-Film and sheeting Determination of tear resistance-part 2: Elmendorf method ISO 3036 Board-Determination of puncture resistance using a pendulum device ISO 13934-1 Textiles-Tensile properties of fabrics-part 1: Determination of maximum force and elongation at maximum force using the strip method ISO 13934-2 Textiles-Tensile properties of fabrics-part 2: Determination of maximum force using the grab method ISO 13937-2 Textiles-Tear properties of fabrics-part 2: Determination of tear force of trouser-shaped test specimens (Single tear method) ISO 8510-1 Adhesives-Peel test for a flexible-bonded-to-rigid test specimen assembly-part 1: 90°peel ISO 8510-2 Adhesives-Peel test for a flexible-bonded-to-rigid test specimen assembly-part 2: 180°peel ISO 1924.1 Paper and board-Determination of tensile properties-part 1: Constant rate of loading method ISO 6892-1 Metallic materials-Tensile testing-part 1: Method of test at room temperature ISO 6892-2 Metallic materials-Tensile testing-part 2: Method of test at elevated temperature ISO 6892-3 Metallic materials-Tensile testing-part 3: Method of test at low temperature ISO 7438 Metallic materials-Bend test ASTM D638 Standard Test Method for Tensile Properties of Plastics ASTM D695 Standard Test Method for Compressive Properties of Rigid Plastics ASTM D790 Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials ASTM D732 Standard Test Method for shear Strength of Plastics by Punch Tool	ASTM D412 Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers-Tension ASTM D882 Standard Test Method for Tensile Properties of Thin Plastic Sheeting ASTM F1306 Standard Test Method for Slow Rate Penetration Resistance of Flexible Barrier Films and Laminates ASTM D5053 Standard Test Method for Breaking Force and Elongation of Textile Fabrics (strip Method) ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers ASTM E8 Standard Test Methods for Tension Testing of Metallic Materials ASTM E9 Standard Test Methods for Metallic Materials Room Temperature GB/T 1040 Plastics-Determination of tensile properties GB/T 1041 Plastics-Determination of compressive properties GB/T 9341 Plastics-Determination of flexural properties GB/T 328 Test methods for building waterproof sheets GB/T 2568 Test method for tensile properties of resin castings GB/T 529 Rubber, vulcanized or thermoplastic-Determination of tear strength (trouser, angle and crescent test pieces) GB/T 528 Rubber, vulcanized or thermoplastic-Determination of tensile stress-strain properties GB/T 2790 Adhesives-Test method for 180° peel strength between flexible and rigid adherends GB/T 2791 Adhesives-Test method for T-peel strength between flexible adherends GB/T 2792 Test method for peel strength of adhesive tapes GB/T 228.1 Metallic materials-Tensile testing-Part 1: Method of test at room temperature GB/T 228.2 Metallic materials-Tensile testing-Part 2: Method of test at elevated temperature GB/T 228.3 Metallic materials-Tensile testing-Part 3: Method of test at low temperature GB/T 7314 Metallic materials-Compression test method at room temperature GB/T 232 Metallic materials-Bend test method GB/T 16491 Electronic universal testing machines GB/T 2611 General technical requirements for testing machines JJG 139 Tension, compression and universal testing machines JJG 475 Electronic universal testing machines	0~50kN: Suitable for complex mechanical property tests including tension, compression, bending, shear and peeling of metallic and non-metallic materials. Adopting a double-column high-rigidity frame and a wide-span crossbeam, the system greatly improves resistance to eccentric load and testing stability and delivers accurate test results for applications with high strength and large deformation. 50kN~300kN: Specially designed for material testing under high load conditions. It supports full-range tests such as tension, compression, bending, shear and peeling for metallic and non-metallic materials. Built with a heavy-duty gantry frame and floor-mounted base, the system enables high-rigidity, low-vibration and precise loading, complying with stringent test standards for aerospace, automotive manufacturing, construction steel and other industries. 300kN~600kN: Mainly used for mechanical tests including tension, compression, bending and shear on metals, automotive components, building materials and composite materials.
 **UTM-EX series Extensometers**	GB/T 12160-2019 Metallic materials-Calibration of extensometers systems used in uniaxial testing ISO 9513: 2012 Metallic materials-Calibration of extensometer systems used in uniaxial testing ASTM E83-23 Standard Practice for Verification and Classification of Extensometer Systems		Compatible with **UTM-E** series, **UTM-H** series and **UTM-HS** series.
 **UTM-M series Video extensometers**	ISO 9513: 2012 Metallic materials-Calibration of extensometer systems used in uniaxial testing		Communicate with **UTM-E** and **UTM-X** series. Advantages: 1. Non-contact measurement, no damage and no interference to specimens. 2. Wide measuring range, suitable for complex test scenarios. 3. High precision and excellent stability, ensuring reliable test data. 4. Easy operation with high visualization. 5. Strong expandability, supporting synchronous measurement of multiple parameters.
 **UTM-F series Fixtures for electronic universal testing machines**	/		Various customized fixtures can be supplied. Illustrated fixtures are for reference.

UTM-Z500



computer and software (included)

ELECTRONIC UNIVERSAL TESTING MACHINES

- Applicable to metal, non-metal and composite materials for tensile, compression, bending and other mechanical properties test analysis and analytical research
- Overload emergency shutdown protection device, up and down travel limit protection device
- Crossbeam movement collision mitigation function
- Test standards and test parameters can be managed and imported or exported test standards
- Automatically obtain the maximum force, breaking force, yield strength, upper and lower yield strength, tensile strength, compressive strength, elongation at break, tensile modulus of elasticity, bending modulus of elasticity and other test data

VIDEO

SPECIFICATION

Code	UTM-Z50	UTM-Z500	UTM-Z1000	UTM-Z2000	UTM-Z5000
Max. test force*	50N	500N	1000N	2000N	5000N
Accuracy class	class 0.5				
Range of test force	0.4%~100%FS				
Accuracy of test force	±0.5% of indicating value				
Resolution of test force	1/300000FS				
Accuracy of displacement	±0.5% of indicating value				
Resolution of displacement	0.2μm				
Range of crossbeam speed	0.001~1000mm/min				
Accuracy of crossbeam speed	±0.5% of indicating value				
Range of force control speed	0.05%~10%FS/s				
Accuracy of force control speed	±0.5% of indicating value				
Effective tensile travel*	450mm				
Effective compression travel*	700mm				
Dimension (L×W×H)	500×380×1150mm				
Power supply	AC 220V, 50Hz				
Net weight	100kg				

STANDARD DELIVERY

Main unit	1 pc
Computer	1 set
Software	1 set
Control box	1 pc
Tensile fixture	1 set

OPTIONAL ACCESSORY

Fixture*	customized
Extensometer*	
Large deformation extensometer*	
Security cover*	

*Can be customized according to test requirements

UTM-E50

ELECTRONIC UNIVERSAL TESTING MACHINES (STANDARD TYPE)

CUSTOMIZABLE INSPECTION CERTIFICATE

- For testing and researching the mechanical properties of metals, ceramics, plastics, rubber and composite materials
- For research and quality control of mechanical properties of materials for a wide range of products such as mechanical components, electronic components, food packaging materials, chemical fibres, films and new energy batteries

flat jaws (included)

V-shaped jaws (included)

large deformation extensometer (**optional**)

VIDEO

To be continued

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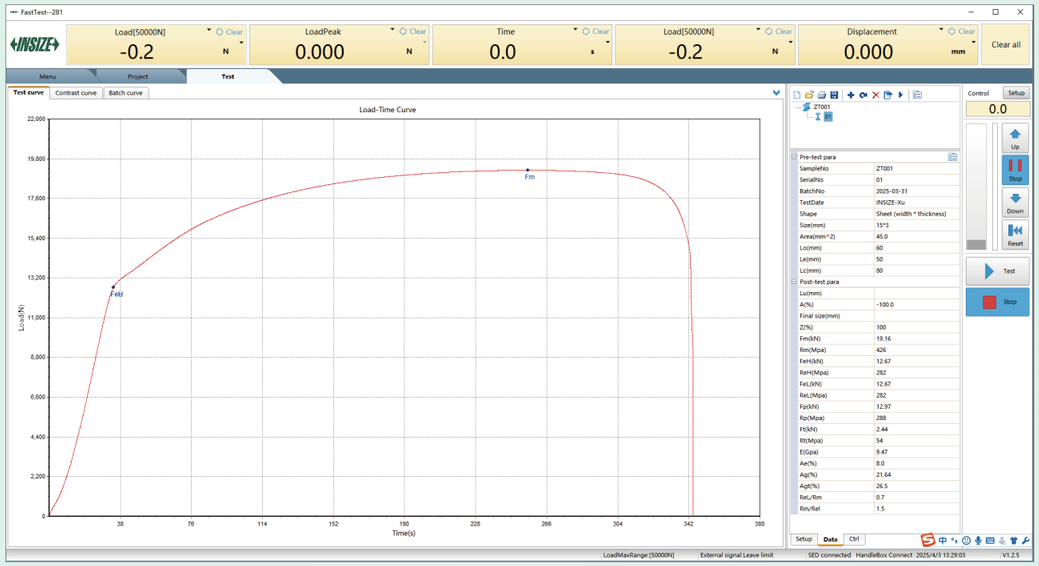

computer and software (included)

SPECIFICATION

Code	UTM-E10	UTM-E20	UTM-E30	UTM-E50
Max. test force	10kN	20kN	30kN	50kN
Accuracy class	class 0.5			
Accuracy of test force	±0.5% of indicated value			
Range of test force	0.2%~100%FS			
Resolution of test force	1/500000FS			
Crossbeam displacement accuracy	±0.5% of indicated value			
Crossbeam displacement resolution	0.025μm			
Range of speed adjustment	0.001~500mm/min			
Accuracy of crossbeam speed	±1% of the set value (speed<0.5mm/min); ±0.2% of the set value (speed≥0.5mm/min)			
Range of force control speed	0.005~5%FS/s			
Accuracy of constant load force	±2% of the set value (speed<0.05%FS/s); ±0.5% of the set value (speed≥0.05%FS/s)			
Compression fixture	Ø100mm	Ø100mm	Ø100mm	Ø100mm
Wedge tension fixture	flat jaw: 0~7mm	flat jaw: 0~7mm V-jaw: Ø4~Ø9mm	flat jaw: 0~7mm V-jaw: Ø4~Ø9mm	flat jaw: 0~14mm V-jaw: Ø4~Ø14mm
Effective test width*	400mm	440mm	440mm	440mm
Vertical test space*	970mm	970mm	970mm	970mm
Effective tensile height*	700mm	610mm	610mm	610mm
Effective compression height*	800mm	700mm	700mm	700mm
Power supply	AC 220V, 50Hz, 0.4kW~1kW			
Dimension (L×W×H)	715×500×1680mm	820×620×1880mm	820×620×1880mm	820×620×1880mm
Net weight	230kg	350kg	350kg	350kg

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SPECIFICATION

Code	UTM-E100	UTM-E200	UTM-E300	UTM-E600
Max. test force	100kN	200kN	300kN	600kN
Accuracy class	class 0.5			
Accuracy of test force	±0.5% of indicated value			
Range of test force	0.2%~100%FS			
Resolution of test force	1/500000FS			
Crossbeam displacement accuracy	±0.5% of indicated value			
Crossbeam displacement resolution	0.025μm			
Range of speed adjustment	0.001~500mm/min			0.001~250mm/min
Accuracy of crossbeam speed	±1% of the set value (speed<0.5mm/min); ±0.2% of the set value (speed≥0.5mm/min)			
Range of force control speed	0.005~5%FS/s			
Accuracy of constant load force	±2% of the set value (speed<0.05%FS/s); ±0.5% of the set value (speed≥0.05%FS/s)			
Compression fixture	Ø160mm	Ø150mm	Ø150mm	Ø200mm
Wedge tension fixture	flat jaw: 0~20mm V-jaw: Ø8~Ø26mm	flat jaw: 0~30mm V-jaw: Ø8~Ø36mm	flat jaw: 0~30mm V-jaw: Ø8~Ø36mm	flat jaw: 0~30mm V-jaw: Ø8~Ø46mm
Effective test width*	600mm	600mm	600mm	750mm
Vertical test space*	1200mm	1000mm	1000mm	1100mm
Effective tensile height*	690mm	420mm	420mm	650mm
Effective compression height*	900mm	600mm	600mm	650mm
Power supply	AC380V, 3Ø, 50Hz, 2kW~5kW			
Dimension (L×W×H)	1100×800×2180mm	1100×920×2550mm	1100×920×2550mm	1140×1580×2980mm
Net weight	1000kg	1500kg	1500kg	5000kg

*Can be customized according to test requirements

STANDARD DELIVERY

Main unit	1 pc
Control box	1 pc
Measuring software	1 pc
Computer	1 pc
Printer	1 pc
Compression fixture	1 set
Wedge tension fixture	1 set
Extensometer (UTM-EX50-10 only for ≥100kN)	1 pc

SPECIFICATION OF LARGE DEFORMATION EXTENSOMETER (OPTIONAL)

Code	UTM-EY1	UTM-EY2
Range of deformation	10~800mm	
Accuracy of deformation	±1%	
Resolution of deformation	0.01mm	0.004mm
Type of blade	flat blade	
Range of clamp	thicknesses<10mm, width<30mm	

To be continued

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OPTIONAL ACCESSORY

Fixture	**UTM-F** series (customized, selection of specifications according to test requirements)
Extensometer	**UTM-EX** series (customizable)
Video extensometer	**UTM-M** series
Large deformation extensometer	**UTM-EY** series (customizable)

OPTIONAL ACCESSORY

Acrylic single-sided front safety guard	**UTM-E10-A**	**Acrylic double-sided front and rear safety guard**	**UTM-E10-AD**	**for UTM-E10**
	UTM-E20-A		**UTM-E20-AD**	**for UTM-E20**
	UTM-E30-A		**UTM-E30-AD**	**for UTM-E30**
	UTM-E50-A		**UTM-E50-AD**	**for UTM-E50**
	UTM-E100-A		**UTM-E100-AD**	**for UTM-E100**
	UTM-E200-A		**UTM-E200-AD**	**for UTM-E200**
	UTM-E300-A		**UTM-E300-AD**	**for UTM-E300**
	UTM-E600-A		/	**for UTM-E600**
Wire mesh single-sided front safety guard	**UTM-E10-W**	**Wire mesh double-sided front and rear safety guard**	**UTM-E10-WD**	**for UTM-E10**
	UTM-E20-W		**UTM-E20-WD**	**for UTM-E20**
	UTM-E30-W		**UTM-E30-WD**	**for UTM-E30**
	UTM-E50-W		**UTM-E50-WD**	**for UTM-E50**
	UTM-E100-W		**UTM-E100-WD**	**for UTM-E100**
	UTM-E200-W		**UTM-E200-WD**	**for UTM-E200**
	UTM-E300-W		**UTM-E300-WD**	**for UTM-E300**
	UTM-E600-W		/	**for UTM-E600**
Perforated steel plate single-sided front safety guard	**UTM-E10-P**	**Perforated steel plate double-sided front and rear safety guard**	**UTM-E10-PD**	**for UTM-E10**
	UTM-E20-P		**UTM-E20-PD**	**for UTM-E20**
	UTM-E30-P		**UTM-E30-PD**	**for UTM-E30**
	UTM-E50-P		**UTM-E50-PD**	**for UTM-E50**
	UTM-E100-P		**UTM-E100-PD**	**for UTM-E100**
	UTM-E200-P		**UTM-E200-PD**	**for UTM-E200**
	UTM-E300-P		**UTM-E300-PD**	**for UTM-E300**
	UTM-E600-P		/	**for UTM-E600**

If hydraulic fixture is selected, the rear safety guard cannot be installed

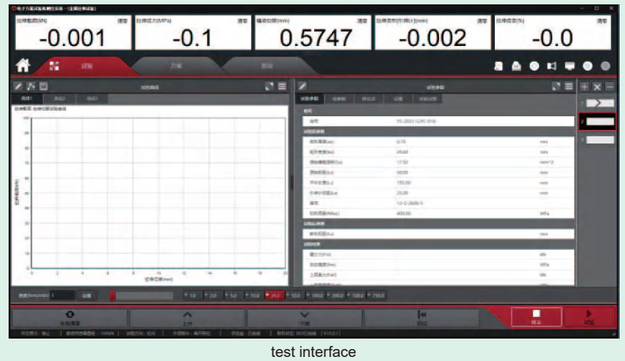
UTM-X010

UTM-X100

ELECTRONIC UNIVERSAL TESTING MACHINES (PROFESSIONAL TYPE)

ATTENTION: FIXTURE (OPTIONAL)

- Equipped with a variety of test standards, can be for metal, ceramics, plastics, rubber and composite materials and other related mechanical properties of the test and research
- The rigidity of the host, loading speed and load, deformation measurement accuracy, data reliability, adoption rate and closed-loop control rate are excellent
- Can be used for research and quality control of mechanical properties of various products such as mechanical parts, electronic parts, food packaging materials, chemical fibres, films, new energy batteries and so on



test interface

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SPECIFICATION

Code		UTM-X001	UTM-X005	UTM-X010
Maximum test force		1kN	5kN	10kN
Accuracy class		class 0.5		
Accuracy of test force		±0.5% of indicated value		
Range of test force		0.2%~100%FS		
Test force resolution		0.002N	0.02N	0.02N
Crossbeam displacement accuracy		±0.1% of indicated value		
Crossbeam displacement resolution		0.1μm		
Velocity accuracy		±0.1% of indicated value		
Range of speed adjustment		0.001~1000mm/min		
Effective test width		420mm		
Vertical test space	standard model	1200mm		
	heightened 250mm (optional)	1450mm		
	heightened 500mm (optional)	1700mm		
Dimension (WxDxH)	standard model	748×582×1600mm		
	heightened 250mm (optional)	748×582×1850mm		
	heightened 500mm (optional)	748×582×2100mm		
Net weight	standard model	160kg		
	heightened 250mm (optional)	185kg		
	heightened 500mm (optional)	210kg		
Power supply		AC220V, 50Hz, 1kW		
Environment requirements		temp: 5~40°C; humidity level: 5~85%RH non-condensing no vibration		

SPECIFICATION

Code		UTM-X050	UTM-X100	UTM-X300
Maximum test force		50kN	100kN	300kN
Accuracy class		class 0.5		
Accuracy of test force		±0.5% of indicated value		
Range of test force		0.2%~100%FS		
Test force resolution		0.2N	0.2N	0.5N
Crossbeam displacement accuracy		±0.1% of indicated value		
Crossbeam displacement resolution		0.1μm		
Velocity accuracy		±0.1% of indicated value		
Range of speed adjustment		0.001~800mm/min		0.001~500mm/min
Effective test width		600mm		
Vertical test space	standard model	1255mm		1450mm
	heightened 250mm (optional)	1505mm		1700mm
	heightened 500mm (optional)	–	–	–
Dimension (L×W×H)	standard model	1100×724×2160mm		1180×756×2440mm
	heightened 250mm (optional)	1100×724×2410mm		1180×756×2690mm
	heightened 500mm (optional)	–	–	–
Net weight	standard model	610kg		965kg
	heightened 250mm (optional)	660kg		1015kg
	heightened 500mm (optional)	–	–	–
Power supply		AC380V, 3Ø, 50Hz, 4kW	AC380V, 3Ø, 50Hz, 4.5kW	AC380V, 3Ø, 50Hz, 6kW
Environment requirements		temp: 5~40°C; humidity level: 5~85%RH non-condensing no vibration		

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STANDARD DELIVERY

Main unit	1 pc
Control box	1 pc
Computer	1 pc
Software	1 pc
Printer	1 pc

OPTIONAL ACCESSORY

safety guard*	customizable
Fixture*	
Extensometer*	
Width gauge*	
High temperature furnace*	
Constant temperature and humidity box*	
High and low temperature environment box*	

*Selection of specifications according to test requirements

tensile fixture (**optional**)

wired hand control box (included)

compression fixture (**optional**)

high precision axial extensometer (**optional**)
(a variety of scales can be selected to fully meet the requirements of variety of materials, theaccuracy meets class 0.5)

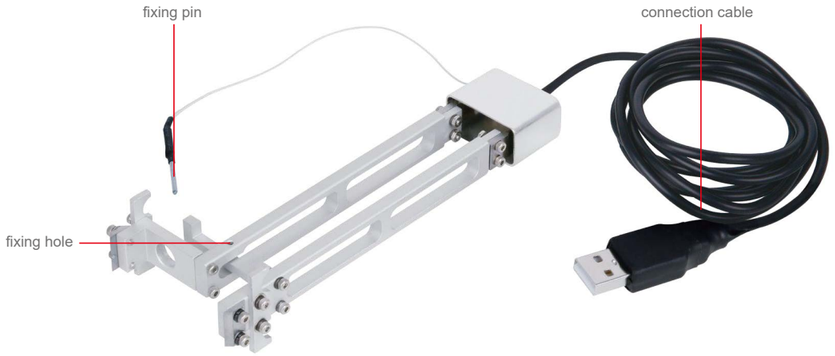
fully automatic extensometer (**optional**)
(class 0.5 high-precision fully-automatic extensometer with a wide measuring range for automatic testing and full strain measurement)

high temperature furnace (**optional**)

width gauge (**optional**)
(widely used for r-value and poisson's ratio measurements, meets the requirements of ASTM E517 and ISO 10113)

constant temperature and humidity box (**optional**)

high and low temperature environment box (**optional**)



UTM-EX50-10

EXTENSOMETERS

CUSTOMIZABLE

- For universal testing machines

SPECIFICATION

Code	Gauge length	Deformation
UTM-EX25-5	25mm	5mm
UTM-EX25-10	25mm	10mm
UTM-EX25-25	25mm	25mm
UTM-EX50-5	50mm	5mm
UTM-EX50-10	50mm	10mm
UTM-EX50-25	50mm	25mm
UTM-EX100-5	100mm	5mm

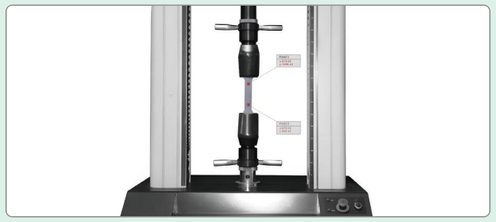
Code	Gauge length	Deformation
UTM-EX100-10	100mm	10mm
UTM-EX100-25	100mm	25mm
UTM-EX200-5	200mm	5mm
UTM-EX200-10	200mm	10mm
UTM-EX200-25	200mm	25mm
UTM-EX-B	large deformation, customized according to the workpieces	

UTM-MB1

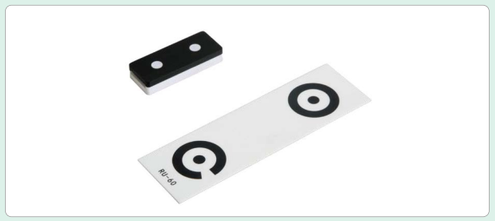
VIDEO EXTENSOMETERS

- Video extensometer is a non-contact, high-precision real-time measurement system, based on vision and image-related algorithms, which realizes real-time measurement of displacement and strain by photographing and analyzing the changes in the image characteristics of the specimen during the loading process. It has the advantages of high precision, wide measurement range, and visualization of the results
- It is used for testing and analyzing the performance of specimens in tension, compression, bending, creep, fatigue, etc. It includes strain (elongation) measurement, tensile/compressive strength measurement, modulus of elasticity measurement and Poisson's ratio measurement
- According to ISO 9513

VIDEO



application



calibration card (included)

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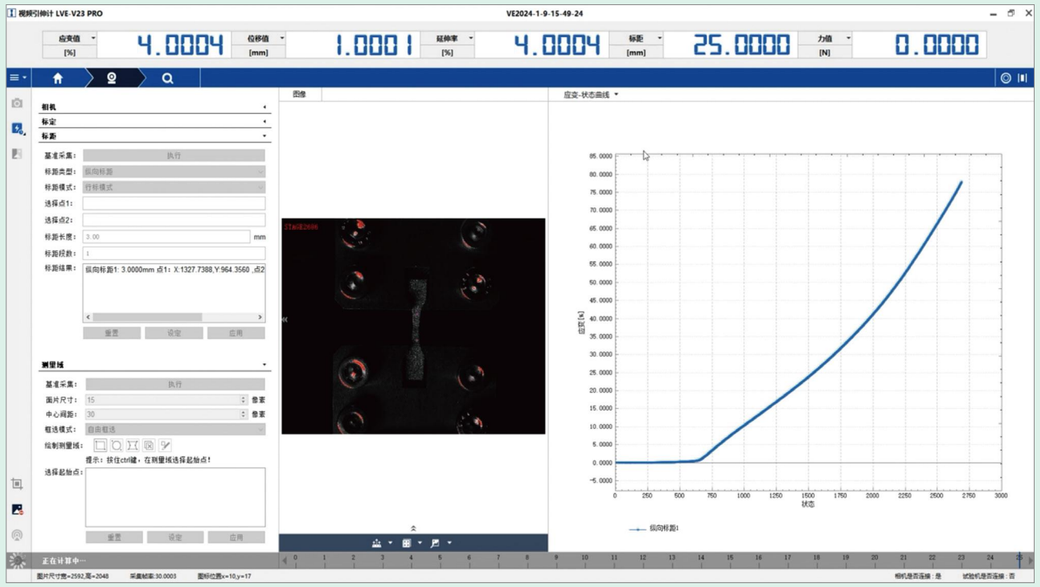

software (included)

SPECIFICATION

Code	Accuracy	Resolution	Range of deformation	Range of scale	Number of scales	Frame rate
UTM-MA1	±1.5μm or ±0.5% of indicated value	0.1μm	standard: 60~100mm extensions: 100~500mm (±1%)	≤500mm	≤2	≤100fps
UTM-MA2					≤10	
UTM-MA3					≤10	
UTM-MB1	±1.0μm or ±0.5% of indicated value		standard: 60~150mm extensions: 150~1000mm (±1%)	≤1000mm	≤2	≤200fps
UTM-MB2					≤10	
UTM-MB3					≤10	
UTM-MC1	±0.5μm or ±0.5% of indicated value		standard: 60~240mm extensions: 240~1500mm (±1%)	≤1500mm	≤2	
UTM-MC2					≤10	
UTM-MC3					≤10	

STANDARD DELIVERY

Code	Main unit	Computer	Control box	Tripod	Box	Video extensometer module	2D-DIC module	Video strain module	Video displacement module	Video angle module	Fatigue extensometer module
UTM-MA1	1 pc	1 pc	1 pc	1 pc	1 pc	√					
UTM-MA2	1 pc	1 pc	1 pc	1 pc	1 pc	√	√				
UTM-MA3	1 pc	1 pc	1 pc	1 pc	1 pc	√	√	√	√	√	√
UTM-MB1	1 pc	1 pc	1 pc	1 pc	1 pc	√					
UTM-MB2	1 pc	1 pc	1 pc	1 pc	1 pc	√	√				
UTM-MB3	1 pc	1 pc	1 pc	1 pc	1 pc	√	√	√	√	√	√
UTM-MC1	1 pc	1 pc	1 pc	1 pc	1 pc	√					
UTM-MC2	1 pc	1 pc	1 pc	1 pc	1 pc	√	√				
UTM-MC3	1 pc	1 pc	1 pc	1 pc	1 pc	√	√	√	√	√	√

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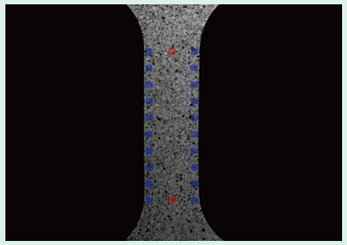
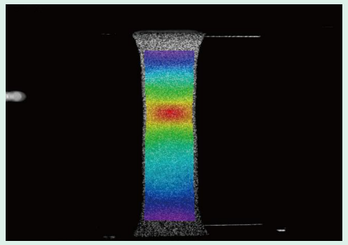


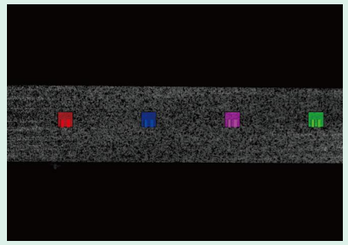
video extensometer module

- It is suitable for a wide range of samples, including specimens, parts and machine deformations.
- It can measure different sizes of specimens, customizable from microns to around ten metres.
- It has a wide strain range, customizable from 0.002% to 1000%.
- It has high measurement accuracy and its core algorithms are accurate to sub-pixel level (0.01 pixels).
- Its distance can be customised, it has a wide range of distances to choose from and the distance within the field of view can be set arbitrarily.
- It enables full-process tracking without downtime and without damaging the measuring device when the sample breaks.
- Its environment is very versatile. It can customise high and low temperature, high pressure, radiation and other scenarios.



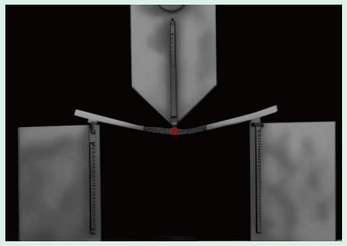
2D-DIC module

- It can measure over the entire area, which is equivalent to hundreds of virtual strain gauges.
- It is a single-phase frame, which can effectively save the hardware cost
- It offers high measurement accuracy, with a maximum strain accuracy of better than 0.002%.
- It can measure specimens of different sizes, from a few millimeters to several meters.
- Its processes are traceable and it is possible to analyse the measurement process repeatedly.
- It is possible to select any measurement area for specific analysis of different areas.



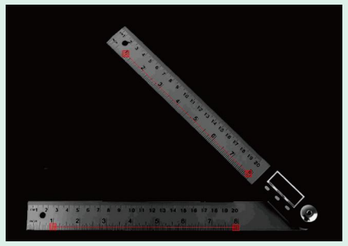
video strain module

- It is a virtual strain gauge, it is non-contact measurement, it does not require a high material surface.
- It is adjustable in size, it can be set to adjust the size of different strain gauges
- It has a large measuring range, its strain range is 0.002%~1000%.
- It can be used to measure small samples to solve the problem of conventional strain gauges pasting small samples.
- It can measure multiple data, strain X/Y/XY, maximum/small principal strain, etc.
- It can be used in high and low tempera-tures to replace the traditional strain gage testing.
- It is very easy to use, no sanding, gluing, processing to use, it does not need to be set up.
- Its test procedure is traceable and the measurement process can be repeated and analyzed retrospectively.



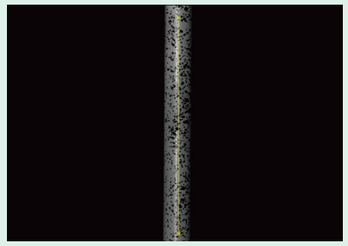
video displacement module

- It is a video sensor that can be adapted to non-contact displacement measurement and monitoring scenarios.
- It is a deflection meter, it can meet the various environments and various scales of deflection testing.
- It is a motion sensor, it can meet the needs of speed and acceleration testing.
- It can test deformable bodies. It is suitable for both rigid and deformable body testing.
- There is no limit to the number of test scenarios it can cover from microns to meters.
- It can perform high-precision testing, it can realize sub-pixel calculation accuracy, it is better than traditional vision.
- It can realize multiple data acquisition, it supports multiple measurement points and displacement X/Y/E test.



video angle module

- It allows for non-contact measurements, it requires no hardware connection to the measuring device and it is easy to use.
- It can perform dynamic angle measure-ment, it can provide real-time feedback on the change of angle during dynamic testing.
- It can perform single line angle measure-ment, it can realize the angle measure-ment in the dynamic change of single line mechanism.
- It can carry out double line angle measure-ment, it can realize the angle measure-ment in the dynamic change of double line angle.
- It can perform linearity measurements, which is used to characterize the linearity of the motion of the mechanism in the dynamic test.



fatigue extensometer module

- It can perform non-contact measurements, it can avoid slipping of the jaws and so on.
- It can perform full-cycle testing, it can be a key to deal with low-week fatigue.
- It can run at high frame rates and it can collect dozens of times the fatigue cycle.
- It can transmit for a long time and it can realize stable output of large data.
- It can participate in the control, it can through the data on the test machine for the control of related actions.

FIXTURES FOR ELECTRONIC UNIVERSAL TESTING MACHINES

CUSTOM-MADE

- For **UTM-E** series electronic universal testing machines

UTM-F001
- Wedge tensile fixture
- For tensile testing of non-metallic materials and thin metal specimens

UTM-F002
- Hydraulic tensile fixture
- For tensile testing of metallic materials, round bar specimens

UTM-F003
- 10kN wedge tensile fixture
- For tensile testing of metal specimens

UTM-F004
- Pneumatic tensile fixture
- For tensile testing of non-metallic material specimens

UTM-F005
- Insulation profile longitudinal shearing fixture
- Longitudinal shear test for insulation type materials

UTM-F006
- Insulation profile transverse tensile fixture
- For transverse tensile testing of insulation-type materials

UTM-F007
- Filament winding fixture
- For tensile testing of data wires, textile fabric wires, plastic wires

UTM-F008
- Filament opposite fixture
- For tensile testing of wire specimens

UTM-F009
- Pneumatic threadlet tensile fixture
- For tensile testing of non-metallic wire specimens

UTM-F010
- Steel wire tensile fixture
- For tensile testing of fine steel wires and iron wires

UTM-F011
- Threadlet winding fixture
- For tensile testing of filamentary metal specimens

UTM-F012
- Fabric belt winding tensile fixture
- For tensile testing of non-metallic material specimens

UTM-F013
- Film tensile fixture
- For tensile testing of paper, film and non-metallic materials

UTM-F014
- Film tensile fixture
- For tensile testing of paper, film and non-metallic materials

UTM-F015
- Thin film opposite fixture
- For tensile testing of paper, film and non-metallic materials

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UTM-F016
- Thin plate opposite fixture
- For tensile testing of thin plates of non-metallic materials

UTM-F017
- Annule tensile fixture
- For tensile testing of non-metallic annular material specimens

UTM-F018
- Adhesive tensile shearing fixture
- For tensile shear testing of different adhesive specimens

UTM-F019
- Surface bonding strength fixture
- Tensile testing for adhesive properties

UTM-F020
- Leverage tensile fixture
- For tensile testing of rubber, silicone and other elastomers

UTM-F021
- Rubber tensile fixture
- Specialized for tensile testing of rubber material specimens

UTM-F022
- 90°rubber peel fixture
- Peel test for adhesion of rubber materials

UTM-F023
- PCB plate 90°peel fixture
- Peel-off test for adhesion of sticky materials on PCBs

UTM-F024
- Plastic bending fixture
- Specialized for flexural testing of plastic specimens

UTM-F025
- Three-point bending fixture
- For bending test of various material specimens

UTM-F026
- Waving fixture
- For tensile testing of non-metallic specimens

UTM-F027
- Butt fixture
- For tensile testing of different materials

UTM-F028
- Shear fixture
- For shear testing of different materials

UTM-F029
- Ceramic shearing fixture
- Specialized for shear testing of ceramic materials

UTM-F030
- Compressive fixture
- For compression testing of different materials

UTM-F031
- Puncture fixture
- For film puncture testing

2 HYDRAULIC UNIVERSAL TESTING MACHINE

Hydraulic universal testing machines are core equipment for mechanical property testing of heavy-duty materials and large components. Driven by a high-pressure hydraulic system and equipped with rigid frames and precise measurement & control modules, they can perform various mechanical tests including tension, compression, bending, shear and pre-fatigue testing and are especially ideal for high-load and large-capacity test applications.

Serving as the benchmark for strength verification in industrial manufacturing and major engineering projects, their technical performance is closely linked to the R&D of high-end equipment, structural safety of engineering works and material quality control. Widely applied in iron and steel metallurgy, aerospace, construction machinery, building materials, cement and other key industries, they are the flagship products for high-load testing among all testing machines.

Application industries

Iron & Steel metallurgy

Aerospace

Construction machinery

Building materials & Cement

Product name	Test standard	Product description
 **UTM-H series** **Hydraulic universal testing machines**	GB/T 16826-2008 Electro-hydraulic servo universal testing machines JJG 1063-2010 Electro-hydraulic servo universal testing machines GB/T 228.1-2021 Metallic materials-Tensile testing-Part 1: Method of test at room temperature ISO 6892-1: 2016 Metallic materials-Tensile testing-Part 1: Method of test at room temperature ASTM E8M-2013 Standard Test Methods for Tension Testing of Metallic Materials at Room Temperature (Metric) EN 10002-1: 2001 Metallic materials-Tensile testing-Part 1: Method of test at room temperature JIS Z 2241: 2011 Method of tensile test for metallic materials at room temperature ASTM E9-2018 Standard Test Methods of Compression Testing of Metallic Materials at Room Temperature GB/T 232-2010 Metallic materials-Bend test method ISO 7438: 2016 Metallic materials-Bend test ASTM E290-2014 Standard Test Methods for Bend Testing of Ductile Materials	Hydraulic Universal Testing MachineThe core strengths of hydraulic universal testing machines lie in high load capacity, superior stability and versatile applicability. They serve as key equipment for quality control of heavy-duty materials and components, R&D of major projects and batch testing in industrial production.Its advantages fully meet the requirements of high-load, long-duration and high-precision tests. It plays an irreplaceable role in testing metallic materials, building materials and structural parts. Meanwhile, it is compatible with complex testing scenarios for scientific research. It is a heavy-duty all-round device in the field of material mechanical testing.
 **UTM-HS series** **Electro-hydraulic servo universal testing machines**		
 **UTM-RA10300 Electro-hydraulic servo flexural and compressive testing machine**	GB/T 17671 Test method of cement mortar strength (ISO method) ISO 679: 2009 Cement-Methods of testing-Preparation and testing of cement mortars for strength	Two test stations of 10kN and 300kN are available, suitable for flexure test and compression test of cement mortar, as well as flexure test of concrete.
 **UTM-RD series** **Electro-hydraulic servo compression testing machines**	/	Suitable for compressive strength tests of materials such as bricks, stones, cement and concrete.

UTM-H600B

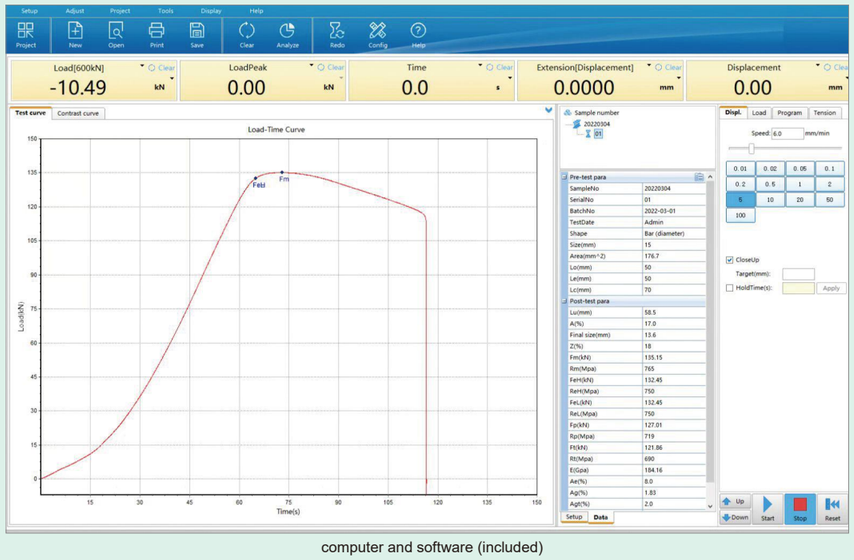
HYDRAULIC UNIVERSAL TESTING MACHINES

CUSTOMIZABLE

INSPECTION CERTIFICATE

- For testing and researching the mechanical properties such as tension, compression, bending, shear
- With full digital closed-loop control system, realizing three-closed-loop control of force, displacement and deformation, with freely combinable control modes
- The main frame worktable, crossbeam and lead screws are all made of high-quality carbon steel with excellent structural stiffness

VIDEO



computer and software (included)

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SPECIFICATION

Code		UTM-H300B	UTM-H600B	UTM-H1000B	UTM-H2000B	UTM-H3000B
Max. test force		300kN	600kN	1000kN	2000kN	3000kN
Accuracy class		1 class				
Accuracy of test force		±1%				
Range of test force		2%~100%FS				
Resolution of test force		1/300000FS				
Deformation measurement device		extensometer				
Range of deformation		1%~100%FS				
Accuracy of deformation		±1%				
Resolution of deformation		1/300000FS				
Accuracy of displacement		±1%				
Resolution of displacement		0.01mm				
Range of displacement		200mm				
Range of piston speed adjustment		0.01~100mm/min			0.01~50mm/min	
Maximum tensile space (including piston stroke)		600mm	600mm	680mm	900mm	1200mm
Maximum compression Space (including piston stroke)		500mm	500mm	560mm	750mm	1100mm
Effective test width		500mm	500mm	560mm	730mm	860mm
Safety protection device		software protection and mechanical limit protection				
Tensile fixture	clamping range of flat jaw*	0~15mm	0~15mm	0~40mm	10~70mm	10~90mm
	clamping range of V-jaw*	Ø10~Ø32mm	Ø13~Ø40mm	Ø13~Ø40mm	Ø15~Ø80mm	Ø25~Ø80mm
Compression fixture*		Ø188mm	Ø188mm	Ø208mm	Ø208mm	Ø280mm
Power supply		AC 380V, 3Ø 50Hz, 2.5kW	AC 380V, 3Ø 50Hz, 3.0kW	AC 380V, 3Ø 50Hz, 3.0kW	AC 380V, 3Ø 50Hz, 3.75kW	AC 380V, 3Ø 50Hz, 5.5kW
Dimension (L×W×H)	host	800×620×1900mm	820×650×2000mm	940×780×2250mm	1317×1124×3220mm	1800×1160×3950mm
	oil source	1140×600×855mm				
Net weight	host	1800kg	2000kg	2800kg	8000kg	12600kg
	oil source	240kg				

*Can be customized according to test requirements

To be continued

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STANDARD DELIVERY

Main unit	1 pc
Oil source	1 pc
Control box	1 pc
Measuring software	1 set
Extensometer (UTM-EX50-10)	1 pc
Tensile fixture	1 set
Compression fixture	1 set
Safety guard	1 set
Computer	1 pc
Printer	1 pc

OPTIONAL ACCESSORY

Acrylic safety guard	**≤1000kN**	**UTM-H-COVER1**
Steel wire safety guard		**UTM-H-COVER2**
Perforated steel plate safety guard		**UTM-H-COVER3**
Extensometer		**UTM-EX series** (customizable)

acrylic safety guard (**optional**)

steel wire safety guard
safety guard (**optional**)

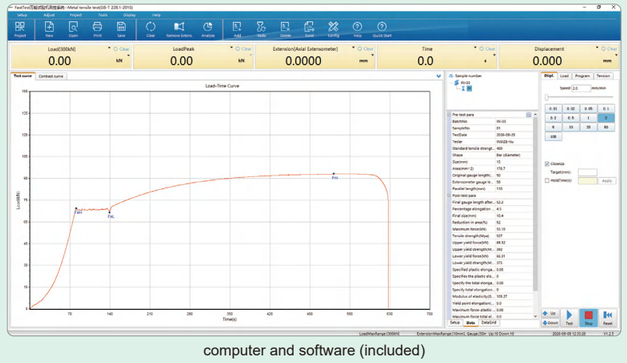
perforated steel plate
safety guard (**optional**)

UTM-HS1000

ELECTRO-HYDRAULIC SERVO UNIVERSAL TESTING MACHINES

CUSTOMIZABLE INSPECTION CERTIFICATE

- For testing and researching the mechanical properties such as tension, compression, bending, shear
- The main frame worktable, crossbeam and lead screws are all made of high-quality carbon steel with excellent structural stiffness
- With full digital closed-loop control system, realizing three-closed-loop control of force, displacement and deformation, with freely combinable control modes



computer and software (included)

STANDARD DELIVERY

Main unit	1 pc
Oil source	1 pc
Control box	1 pc
Measuring software	1 set
Extensometer (UTM-EX50-10)	1 pc
Tensile fixture	1 set
Compression fixture	1 set
Safety guard	1 set
Computer	1 pc
Printer	1 pc

To be continued

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SPECIFICATION

Code		UTM-HS300	UTM-HS600	UTM-HS1000	UTM-HS2000	UTM-HS3000
Max. test force		300kN	600kN	1000kN	2000kN	3000kN
Accuracy class		class 0.5				
Accuracy of test force		±0.5%				
Range of test force		2%~100%FS				
Resolution of test force		1/300000FS				
Deformation measurement device		extensometer				
Range of deformation		1%~100%FS				
Accuracy of deformation		±0.5%				
Resolution of deformation		1/300000FS				
Accuracy of displacement		±0.5%				
Resolution of displacement		0.01mm				
Range of displacement		250mm				
Range of piston speed adjustment		0.01~100mm/min			0.01~50mm/min	
Maximum tensile space (including piston stroke)		800mm	820mm	850mm	900mm	1200mm
Maximum compression Space (including piston stroke)		700mm	720mm	720mm	750mm	1100mm
Effective test width		515mm	530mm	630mm	730mm	860mm
Safety protection device		software protection and mechanical limit protection				
Tensile fixture	clamping range of flat jaw*	2~20mm	10~30mm	9~40mm	10~70mm	10~90mm
	clamping range of V-jaw*	Ø9~Ø26mm	Ø15~Ø40mm	Ø21~Ø55mm	Ø15~Ø80mm	Ø25~Ø80mm
Compression fixture*		Ø188mm	Ø188mm	Ø208mm	Ø208mm	Ø280mm
Power supply		AC 380V, 50Hz 2.5kW	AC 380V, 50Hz 3.0kW	AC 380V, 50Hz 3.0kW	AC 380V, 50Hz 3.75kW	AC 380V, 50Hz 5.5kW
Dimension (L×W×H)	host	910×740×2260mm	960×780×2400mm	1120×900×2735mm	1317×1124×3220mm	1800×1160×3950mm
	oil source	930×725×1825mm				
Net weight	host	2600kg	2900kg	4600kg	8000kg	12600kg
	oil source	350kg				

*Can be customized according to test requirements

OPTIONAL ACCESSORY

Extensometer	**UTM-EX** series (customizable)

ELECTRO-HYDRAULIC SERVO FLEXURAL AND COMPRESSIVE TESTING MACHINE

CODE UTM-RA10300

VIDEO

- According to ISO 679
- With constant stress control and load holding function
- Suitable for cementitious sand flexural test, cementitious sand compressive test and concrete flexural test

SPECIFICATION

Application	flexural	compression
Max. test force	10kN	300kN
Accuracy class	class 0.5	
Accuracy of test force	±0.5% of indicated value	
Range of test force	1%~100%FS	
Resolution of test force	1/300000FS	
Frequency	50Hz	
Distance between upper and lower platen	180mm	240mm
Stroke of piston	60mm	80mm
Diameter of column	Ø30mm	Ø50mm
Distance between columns	180mm	210mm
Size of platen	Ø155mm	
Power supply	AC380V, 3Ø, 50Hz, 0.75kW	
Dimension (L×W×H)	1420×475×1350mm	
Net weight	450kg	

STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Printer	1 pc
Cementitious sand flexural fixture	1 set
Cementitious sand compression fixture	1 set

cementitious sand compression fixture (included)

cementitious sand flexural fixture (included)

UTM-RD2000

ELECTRO-HYDRAULIC SERVO COMPRESSION TESTING MACHINES

INSPECTION CERTIFICATE

- According to relevant standards including GB/T, ISO, ASTM, DIN, JIS
- Capable of loading at constant load rate or constant stress rate
- Suitable for compressive strength tests of materials such as bricks, stones, cement and concrete

SPECIFICATION

Code		UTM-RD2000	UTM-RD3000
Max. test force		2000kN	3000kN
Accuracy class		class 1	
Accuracy of test force		±1% of indicated value	
Range of test force		4%~100%FS	
Resolution of test force		0.01kN	
Platen dimensions (upper & lower)		upper platen: Ø290mm; lower platen: 265×265mm	450×450mm
Distance between upper and lower platen		245mm	450mm
Stroke of piston		80mm	100mm
Diameter of column		Ø320mm	Ø400mm
Rated pressure of hydraulic pump		25Mpa	
Power supply		AC380V, 3Ø, 50Hz, 3kW	
Dimension (L×W×H)	host	600×500×1520mm	800×770×1900mm
	oil source	1140×600×855mm	1140×600×855mm
Net weight	host	1400kg	1700kg
	oil source	220kg	220kg

To be continued

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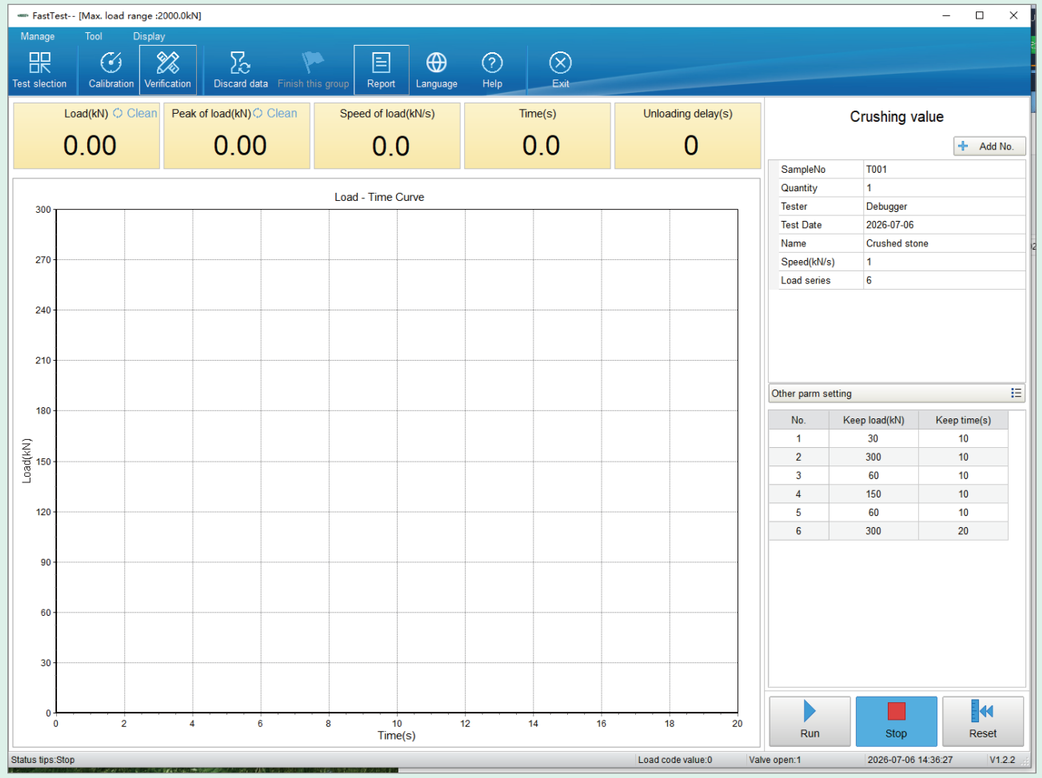
STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Printer	1 pc



computer and software (included)

3 SPRING TESTING MACHINE

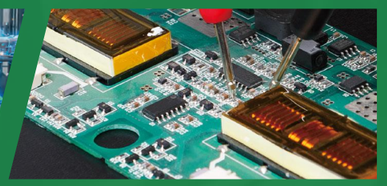
The spring testing machine is dedicated core equipment for spring R&D, production quality control and reliability verification. It accurately simulates the actual stress conditions of springs in service, including static tension/compression and dynamic cyclic load and measures key mechanical parameters such as stiffness, elastic limit and fatigue life. It provides data support for performance optimization, quality acceptance and safety assessment of spring products.

Indispensable to machinery manufacturing, automotive, electronics and other industries, this equipment is designed targeting the core characteristics of springs: elastic bearing and cyclic operation. It delivers full-scenario testing solutions for springs of various types and sizes, mainly divided into two categories: static performance testing machines and dynamic fatigue testing machines.

Application industries

Machinery manufacturing

Automotive industry



Electronics industry

Product name	Test standard	Product description
 ISF-S series Digital spring testers	/	The spring tension and compression testing machine is a precision instrument designed to measure the load-deformation characteristics of elastic components. It is primarily used to test the working load of tension springs and compression springs at specified working lengths and accurately obtain the correlation between load and deformation. It is also applicable to testing the spring force, load and related mechanical properties of rubber, spring leaves and other elastic devices, providing reliable data for quality control and performance evaluation of elastic parts.
 SRT-A series Manual spring testing machines	GB/T 1239.1-2009 Cold coiled cylindrical helical springs-Specifications-Part 1: Tension springs GB/T 1239.2-2009 Cold coiled cylindrical helical springs-Specifications-Part 2: Compression springs GB/T 1239.3-2009 Cold coiled cylindrical helical springs-Specifications-Part 3: Torsion springs GB/T 1239.4-2018 Cold coiled cylindrical helical springs-Specifications-Part 4: Non-cylindrical helical springs ISO 22705-1: 2021 Springs-Measurement and test parameters-Part 1: Cold formed cylindrical helical compression springs ISO 22705-2: 2023 Springs-Measurement and test parameters-Part 2: Cold formed cylindrical helical extension springs ASTM A125-24 Standard Specification for Steel Springs, Helical, Heat-Treated	Spring Testing Machine is dedicated core equipment for measuring the static mechanical properties of springs. Designed for compression springs, tension springs, disc springs, leaf springs and other spring types, it applies controllable static tension and compression loads to simulate the static stress state of springs during assembly and service. It accurately measures key parameters including stiffness, elastic limit, yield load, permanent deformation and maximum load capacity. Its core advantages lie in accurate quantification of static performance and compatibility with all spring types. It can generate fundamental data such as force-displacement curves for spring R&D and deliver fast and compliant test evidence for mass production quality control. As a reliable testing tool, it ensures consistent performance and high reliability of spring products in automotive, electronics, machinery, aerospace and other industries.
 SRT-B series Touch screen automatic spring testing machines		
 SRT-C series Automatic spring testing machines		

ISF-S10

ISF-S500

ISF-S1000

DIGITAL SPRING TESTERS

DATA OUTPUT

- Peak hold and automatic release function
- Set upper and lower limits, red and green indicator and buzzer alarm
- Automatic conversion of three units: N, kgf, lbf
- Built in printer
- Automatic power off

VIDEO

SPECIFICATION

Code	ISF-S10	ISF-S20	ISF-S30	ISF-S50	ISF-S100	ISF-S200	ISF-S300	ISF-S500	ISF-S1000	ISF-S2000	ISF-S5000
Maximum load	10N	20N	30N	50N	100N	200N	300N	500N	1000N	2000N	5000N
Resolution	0.001N	0.002N	0.01N	0.01N	0.02N	0.05N	0.1N	0.1N	0.2N	0.5N	1N
Range of digital scale	65mm			95mm					150mm		
Resolution of digital scale	0.01mm			0.01mm					0.01mm		
Disk diameter	Ø30mm			Ø49mm					Ø108mm		
Maximum free length of spring	65mm			95mm					200mm		
Measuring range of force	5%~100% (maximum load)										
Accuracy of force	±1% (maximum load)										
Data output	RS232										
Power supply	220V, 50/60Hz										
Dimension (L×W×H)	300×235×600mm			300×235×620mm					490×300×920mm		
Net weight	13.2kg			17.3kg	19.1kg			20.8kg	47.5kg		

STANDARD DELIVERY

Main unit	1 pc

OPTIONAL ACCESSORY

Data output cable (keyboard format)	7302-ISF-S

SRT-A10

SRT-A500

MANUAL SPRING TESTING MACHINES

INSPECTION CERTIFICATE

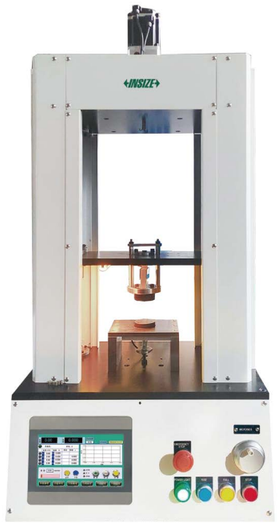
- Applicable to all types of springs tension, compression tests
- Data input via touch screen, simple operation
- Intelligent determination of qualified/unqualified status via red-green indicator lights
- 3-point mechanical positioning mechanism, facilitates batch testing
- Force unit: N, lb, displacement unit: mm, in
- Built-in micro-printer for printing current test data
- Supports browsing and viewing of measured data

SPECIFICATION

Code	SRT-A10	SRT-A20	SRT-A50	SRT-A100	SRT-A200	SRT-A500	SRT-A1K	SRT-A2K
Max. test force	10N	20N	50N	100N	200N	500N	1kN	2kN
Range of test force	5%~100%FS							
Resolution of test force	1/20000FS							
Accuracy class	class 0.5							
Accuracy of test force	±0.5% of indicated value							
Resolution of displacement	0.01mm							
Accuracy of displacement	±(50+0.15L)μm (note: L is the distance between two compression fixtures, mm)							
Max. compression spring height	80mm					330mm		
Max. tension space	80mm					330mm		
Diameter of compression fixture	Ø50mm					Ø100mm		
Power supply	AC 220V, 50Hz							
Dimension (L×W×H)	650×350×630mm					660×460×1030mm		
Net weight	40kg					100kg		

STANDARD DELIVERY

Main unit	1 pc
Pull clamp	1 pc
Compression fixture	1 pc



SRT-B200

TOUCH SCREEN AUTOMATIC SPRING TESTING MACHINES

CUSTOMIZABLE INSPECTION CERTIFICATE

- Applicable to all types of springs tension, compression tests
- Utilize six-column high-strength load frame structure equipped with four lead screws and two guide columns to ensure stable and reliable loading
- Automatic zero seeking function
- Intelligent determination of qualified/unqualified status via red-green indicator lights
- Force unit: N, kg, lb, displacement unit: mm, in
- Built-in micro-printer for printing current test data
- Supports browsing and viewing of measured data
- With force overload protection, beam limit position protection

SPECIFICATION

Code	SRT-B10	SRT-B50	SRT-B100	SRT-B200	SRT-B500	SRT-B1K	SRT-B2K
Max. test force	10N	50N	100N	200N	500N	1kN	2kN
Range of test force	3%~100%FS						
Resolution of test force	1/20000FS						
Accuracy class	class 0.5						
Accuracy of test force	±0.5% of indicated value						
Range of displacement speed	0.01~500mm/min						
Resolution of displacement	0.01mm						
Accuracy of displacement	±(50+0.15L)μm (note: L is the distance between two compression fixtures, mm)						
Max. compression spring height*	350mm						
Max. tension space*	350mm						
Diameter of compression fixture*	Ø50mm				Ø120mm		
Power supply	AC 220V, 50Hz, 300W				AC 220V, 50Hz, 600W		
Dimension (L×W×H)	700×330×830mm				700×330×830mm		
Net weight	70kg				170kg		

*Can be customized according to test requirements

To be continued

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SRT-B5K

SPECIFICATION

Code	SRT-B5K	SRT-B10K	SRT-B20K	SRT-B50K	SRT-B100K
Max. test force	5kN	10kN	20kN	50kN	100kN
Range of test force	3%~100%FS				
Resolution of test force	1/20000FS				
Accuracy class	class 0.5				
Accuracy of test force	±0.5% of indicated value				
Range of displacement speed	0.01~500mm/min				
Resolution of displacement	0.01mm				
Accuracy of displacement	±(50+0.15L)μm (note: L is the distance between two compression fixtures, mm)				
Max. compression spring height*	750mm			1000mm	
Max. tension space*	750mm			1000mm	
Diameter of compression fixture*	Ø120mm			Ø280mm	
Power supply	AC 220V, 50Hz, 1kW			AC 220V, 50Hz, 3kW	
Dimension (L×W×H)	750×830×1500mm			1400×800×2500mm	
Net weight	250kg			670kg	

*Can be customized according to test requirements

STANDARD DELIVERY

Main unit	1 pc
Pull clamp	1 pc
Compression fixture	1 pc
Security door (≥500N)	1 pc

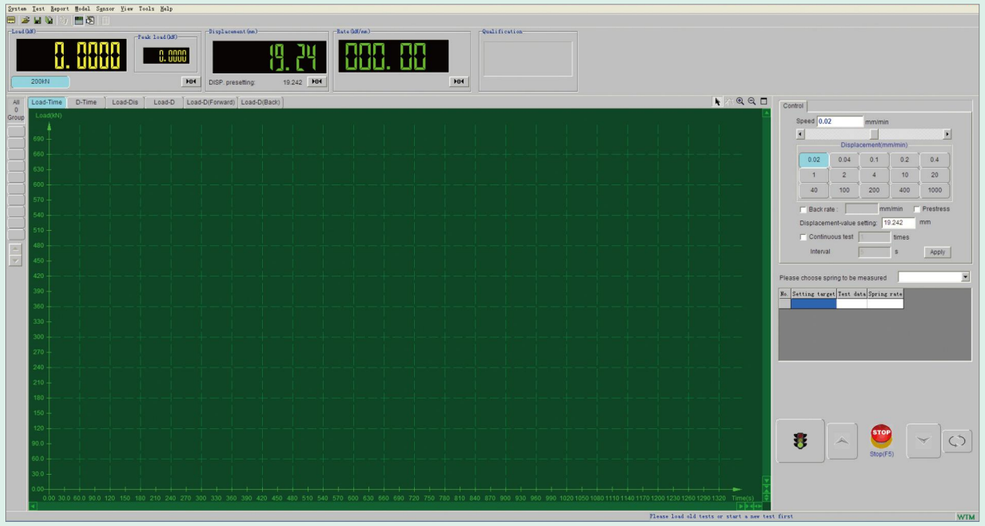
SRT-C200

SRT-C10K

AUTOMATIC SPRING TESTING MACHINES

- Applicable to all types of springs tension, compression tests
- Utilize high-strength load frame structure equipped with four lead screws and two guide columns to ensure stable and reliable loading
- Automatic zero seeking function
- Force unit: N, kg, lb, displacement unit: mm, in
- Test data and curve can be stored automatically, test report can be generated automatically
- With force overload protection, beam limit position protection, overload protection

VIDEO



computer and software (included)

To be continued

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SPECIFICATION

Code	SRT-C10	SRT-C50	SRT-C100	SRT-C200	SRT-C500	SRT-C1K	SRT-C2K
Max. test force	10N	50N	100N	200N	500N	1KN	2KN
Range of test force	1%-100%FS						
Resolution of test force	1/100000FS						
Accuracy class	class 0.5						
Accuracy of test force	±0.5% of indicating value						
Range of displacement speed	0.01~500mm/min						
Resolution of displacement	0.01mm						
Accuracy of displacement	±(50+0.15L)μm (note: L is the distance between two compression fixtures, mm)						
Max. compression spring height	350mm						
Max. tension space	350mm						
Diameter of compression fixture	Ø50mm				Ø120mm		
Power supply	AC 220V, 50Hz, 300W				AC220V, 50Hz, 600W		
Dimension (L×W×H)	700×330×830mm				700×330×830mm		
Net weight	70kg				170kg		

SPECIFICATION

Code	SRT-C5K	SRT-C10K	SRT-C20K	SRT-C50K
Max. test force	5kN	10kN	20kN	50kN
Range of test force	1%-100%FS			
Resolution of test force	1/100000FS			
Accuracy class	class 0.5			
Accuracy of test force	±0.5% of indicating value			
Range of displacement speed	0.01~500mm/min			
Resolution of displacement	0.01mm			
Accuracy of displacement	±(50+0.15L)μm (note: L is the distance between two compression fixtures, mm)			
Max. compression spring height	750mm			
Max. tension space	750mm			
Diameter of compression fixture	Ø200mm			
Power supply	AC 220V, 50Hz, 1200W			
Dimension (L×W×H)	750×830×1500mm			
Net weight	250kg			

STANDARD DELIVERY

Main unit	1 pc
Computer	1 set
Software	1 set
Printer	1 pc
Pull clamp	1 set
Compression fixture	1 set

4 FATIGUE TESTING MACHINE

Fatigue testing machines are key equipment for evaluating the durability and reliability of materials and components. By accurately simulating alternating loads such as vibration, cyclic stress and impact fluctuation throughout the product lifecycle, they test the fatigue limit, life degradation and crack initiation & propagation of materials under long-term loading. They serve as an essential benchmark to prevent product failure and ensure the safe operation of major equipment.

Widely used in highly demanding sectors including aerospace, high-end automotive, wind power equipment, rail transit and nuclear power, this equipment is vital for new material R&D and indispensable for quality control in advanced manufacturing. Its technical performance is closely linked to the core competitiveness of high-end industries.

Application industries

Aerospace | High-end automotive | Wind power equipment | Rail transit | Nuclear power | New materials

Product Features

I. Precise alternating load control and superior capability to simulate actual working conditions

1. Three-closed-loop control of load, displacement and strain: Adopting servo hydraulic or electro-hydraulic servo technology, the control accuracy of alternating load reaches ±0.5% (±0.1% for high-end models). It accurately generates various load waveforms including sine wave, square wave and triangular wave, fully reproducing the actual stress of materials and components, such as vibration load of automotive springs, alternating stress of bridge structures and cyclic load of aero-engine blades.
2. Wide frequency and load range: The frequency ranges from 0.01Hz to 100Hz and the load spans from several kN to thousands of kN (10kN ~ 5000kN). It is applicable to low-load fatigue tests of tiny parts like electronic component pins, as well as high-load fatigue tests of large structural components such as wind power main shafts and construction machinery frames.
3. Impact-free loading: The loading process is stable without impact, preventing premature material damage caused by sudden load changes. It ensures the test results truly reflect the actual fatigue life of materials, including fatigue limit and fatigue crack growth rate of metallic materials.

II. Long-term stable operation, suitable for long-cycle fatigue tests

1. High reliability for continuous cycling: Key components including servo valves, hydraulic cylinders,
motors and seals are made of industrial high-strength materials with precision manufacturing. The machinesupports long-duration continuous cyclic tests from millions up to hundreds of millions of cycles, withannual mean time between failures no less than 5000 hours. It fully meets the requirements of long-cycleand high-cycle fatigue tests, such as the 106-cycle fatigue life verification for automotive parts.
2. Excellent thermal stability and heat dissipation: The hydraulic system adopts high-efficiency heatdissipation design to avoid load fluctuation caused by overheating during prolonged operation. The electriccontrol system is equipped with temperature compensation function to maintain steady control accuracyand good data repeatability, with the coefficient of variation for tests on the same batch of samples 1%.
3. Low energy consumption and low noise: Equipped with energy-saving hydraulic pumps and noisereduction structure, it saves over 30% energy compared with conventional fatigue testing machines. Theoperating noise is no more than 75 dB, making it ideal for long-term use in laboratories and industrial workshops.

III. Versatile Compatibility for Various Fatigue Tests

1. Multiple test modes supported: Axial fatigue, bending fatigue, torsion fatigue and combined fatigue (tension-torsion, bending-torsion, etc.) can be switched via software. No additional dedicated equipment isrequired to cut test costs. Typical applications include bending-torsion combined fatigue test for aero-engine blades and tensile fatigue test for bolts.
2. Wide adaptability to materials and components: It is applicable to metals (steel, aluminum, titaniumalloy), composite materials (carbon fiber, glass fiber), as well as parts and components such as springs, bolts, bearings, vehicle frames and blades. Diverse tests are realized by replacing fixtures, including fatiguetension fixtures, bending fixtures and torsion fixtures.
3. Capability to simulate special working conditions: Matched with auxiliary devices such as high-temperature furnaces (up to 1200°C), low-temperature chambers (2 196°C) and corrosion chambers, itcan conduct fatigue tests under high temperature, low temperature and corrosive environments. It coverstest scenarios like high-temperature fatigue life test for nuclear power steel and corrosion fatigue test formarine engineering materials, catering to R&D demands under complex working conditions.

IV. Accurate Data Acquisition & Analysis for Research and Quality Control

1. High-precision data acquisition: Equipped with high-resolution force sensors, displacement sensors and strain acquisition modules, the sampling frequency ranges from 10 kHz to 100 kHz. It collects real-time data of load, displacement, strain and cycle counts and captures subtle changes during material fatigue, such as strain mutation at the initiation and propagation stages of fatigue cracks.
2. Professional data analysis software: Built-in fatigue life analysis module supports plotting of S-N curves (stress-life curves) and P-S-N curves (probability-stress-life curves), as well as crack growth rate curves. It automatically calculates parameters including fatigue limit, fatigue strength and fatigue life and generates test reports compliant with ASTM E466, ISO 12107, GB/T 3075 and other standards.
3. Traceable and exportable data: Raw data storage, curve playback and data export in Excel, PDF and CSV formats are available. It facilitates thesis writing, product quality traceability and subsequent data review, meeting the demands of academic research and industrial quality control.

V. Comprehensive Safety Protection & Easy Operation

1. Multiple safety protections: The machine is fitted with overload protection, over-travel protection, emergency stop button and anti-splash guard. It effectively protects operators and equipment when specimens fracture during fatigue tests and prevents safety hazards such as splash caused by specimen failure under high load.
2. Automatic and intelligent operation: It enables automatic setting of test parameters (cycle count, load amplitude, frequency), automatic test start/stop and automatic alarm for overload or specimen breakage, minimizing manual operation errors. High-end models support remote control and data monitoring for centralized management of multiple devices.
3. Convenient maintenance: Key components adopt modular design for easy disassembly and replacement. The built-in software provides on-line diagnosis and fault alerts to simplify maintenance. The hydraulic system features reliable sealing with low leakage risk and a long maintenance cycle of 6 to 12 months.

VI. Strong Expandability for Complex Test Scenarios

1. Linkage with auxiliary equipment: It can work in conjunction with video extensometers, infrared thermal imagers and acoustic emission detectors to realize synchronous multi-parameter testing of load, displacement, strain, temperature and crack signals. This enables in-depth analysis of material fatigue damage mechanisms, such as real-time monitoring of fatigue crack propagation in scientific research.
2. Powerful customization capability: Custom design is available to meet special requirements including ultra-high load, ultra-high frequency, special waveforms and tests for irregular-shaped components. It caters to personalized testing demands in high-end sectors such as aerospace, nuclear power and wind power.

Product name	Test standard	Product description
 **FTM-D series** **Servohydraulic fatigue testing machines**	ASTM D3479 Standard Test Method for Compressive Strength and Elastic Moduli of Intumescent Coatings and Mastics ASTM D7615 Standard Test Method for Measuring the Fast Fracture Toughness and Crack Growth Resistance of Advanced Ceramics at Ambient Temperature by Single-Edge V-Notch Beam (SEVNB) Method GB/T 3075-2008 Metallic materials-Fatigue testing-Axial force control method HB 5287-2001 Test method for plane-strain fracture toughness KIc of metallic materials GB/T 15248-2008 Metallic materials-Dynamic tear test method GB/T 6398-2017 Metallic materials-Fatigue testing-Statistical planning and analysis of data GB/T 4161-2007 Metallic materials-Plane-strain fracture toughness KIc test method GB/T 21143-2014 Metallic materials-Unified test method for quasi-static fracture toughness ASTM E1290 Standard Test Method for Crack-Tip Opening Displacement (CTOD) Fracture Toughness Measurement ASTM E399 Standard Test Method for Linear-Elastic Plane-Strain Fracture Toughness KIC of Metallic Materials JJG 556-2011 Verification Regulation for Electronic Universal Testing Machines	Suitable for mechanical tests including tension, compression, bending, tension-tension, compression-compression and tension-compression. Applicable to fatigue tests of composite materials, steel, aluminum alloy, superalloys and other materials.
 **FTM-U series** **Servohydraulic fatigue testing machines**		

FTM-D100

SERVOHYDRAULIC FATIGUE TESTING MACHINES (CYLINDER DOWN-MOUNTED)

ATTENTION: CUSTOMIZED ACCORDING TO TEST METHOD

- According to ASTM D3479, ASTM D7615, GB/T 3075, HB 5287, GB/T 15248, GB/T 6398, GB/T 4161, GB/T 21143, ASTM 1290, ASTM-E399, JJG 556-2011
- Suitable for fatigue testing of composite materials, steel, aluminium alloys, super alloys, etc.
- Suitable for tensile, compression, bending, tension-tension, compression-compression, tension-compression and other mechanical properties of the test

VIDEO

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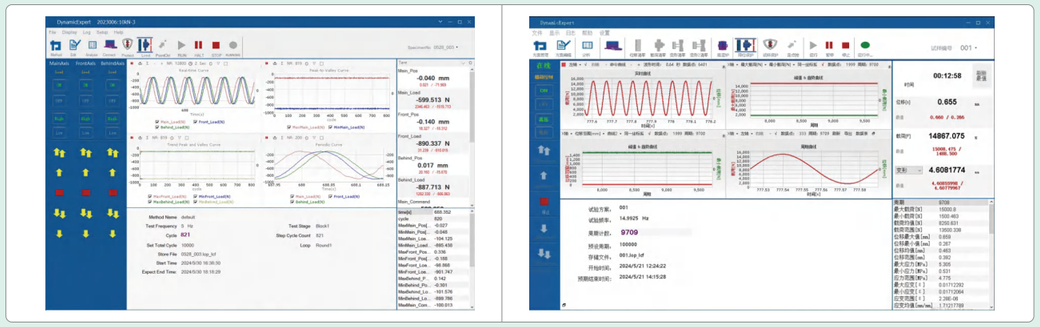

software (included)

SPECIFICATION

Code	FTM-D50	FTM-D100	FTM-D250	FTM-D500
Max. test force	50kN	100kN	250kN	500kN
Accuracy of static force measurement	±0.5% of indicated value			
Accuracy of dynamic force measurement	±2% of indicated value			
Range of test force	0.5%~100%FS			
Actuator stroke*	±75mm			
Accuracy of displacement measurement	linearity error<40μm, repeatability<0.001%FS			
Range of frequency	0~100Hz			
Concentricity	≤5%			
Vertical test space*	1120mm	1200mm	1235mm	2000mm
Effective test width*	540mm	540mm	650mm	780mm
Test waveform	sine wave, square wave, triangle wave, ramp wave, random wave, spectral loading, sweep frequency, etc.			
Stiffness	5×10^8N/m			
Dimension (L×W×H)	1040×730×3000mm	1040×730×3000mm	1265×900×3800mm	1500×980×4200mm
Net weight	1050kg	1150kg	1650kg	2400kg
Power supply	AC 380V, 3Ø, 50Hz			

*Can be customized according to test requirements

STANDARD DELIVERY

Main unit	1 pc
Hydraulic oil source	1 set
Main circulating cooling water system	1 set
Control box	1 pc
Measuring software	1 set
Computer	1 pc
Printer	1 pc

OPTIONAL ACCESSORY

Fixture	customized
Extensometer	
High-temperature extensometer	
High and low temperature test chamber	
Temperature and humidity test chamber	
High-temperature furnace	
Security door	
Video extensometer	**UTM-M** series

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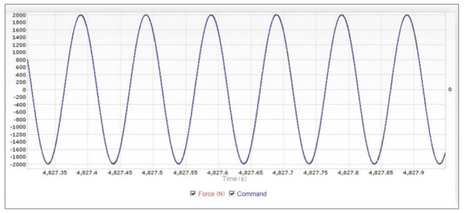
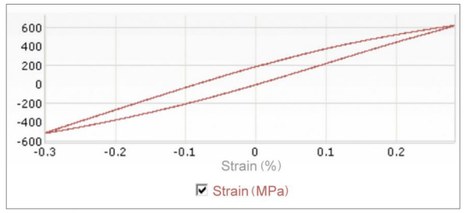
WAVEFORM OF WORKING CONDITION



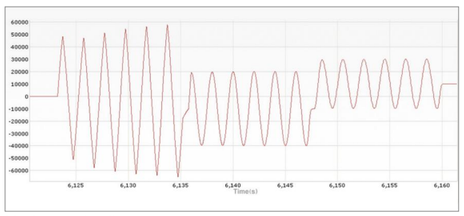
high cycle fatigue test

- Cyclic testing of specimens or components until failure, for fatigue, pre-cracked fracture mechanical specimens



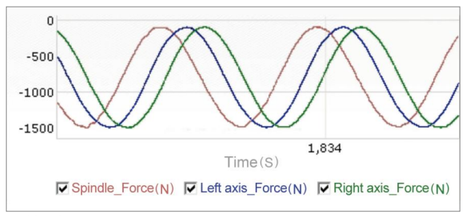
low cycle fatigue test

- Perform strain-controlled or load-controlled fatigue tests with simultaneous acquisition of force and strain hysteresis loop data



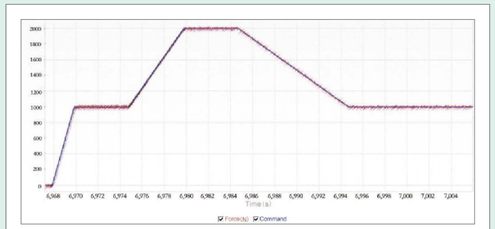
block-wave loading

- Build a block cycle wave to load the part
- Collect peak/valley data and monitor component failure



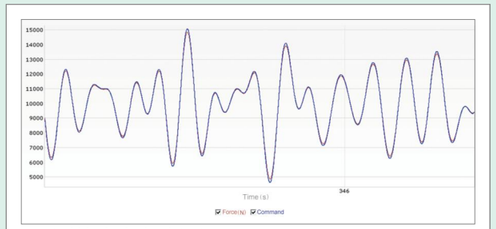
multi-axis test

- Run multiple in-phase or out-of-phase control channels to create multi-degree-of-freedom loading states such as bi-axial, tri-axial, multi-axial and axial-torsion tests



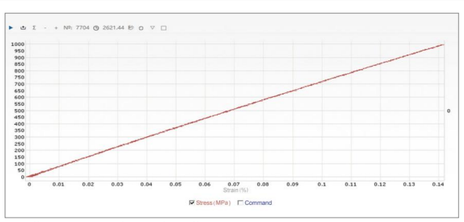
slope and hold, multi-slope ramps

- Use of ramp and hold sequences to assess creep fatigue or to establish thermal fatigue effects, to simulate real strain rate loading or to assess strain rate sensitivity in the presence of multi-slope ramp waves



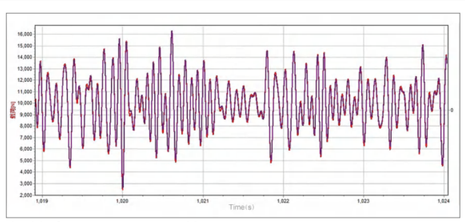
spectral block playback test

- Use the spectrum playback function to play back frequency data and value data defining the operating history



tensile, compression or bending test

- Fast or slow ramp wave commands set by speed or time to simultaneously collect stress, strain and displacement data for modulus, stiffness, yield or ultimate strength analysis



double frequency superposition wave

- Two signals of different frequencies and amplitudes are superimposed to generate a new waveform

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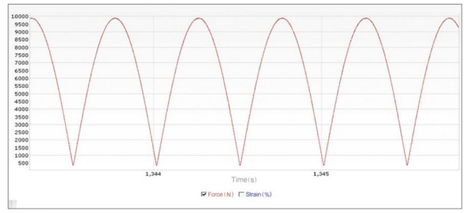
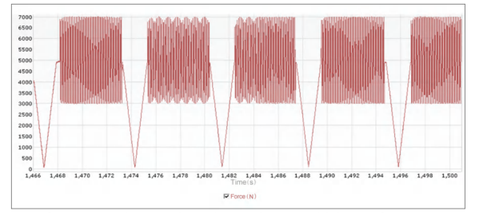
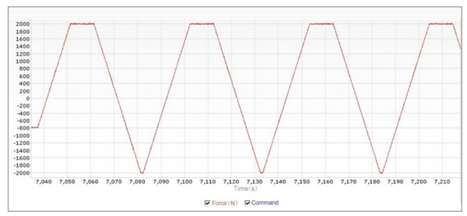


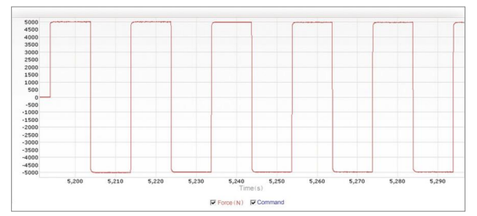
half-sine wave



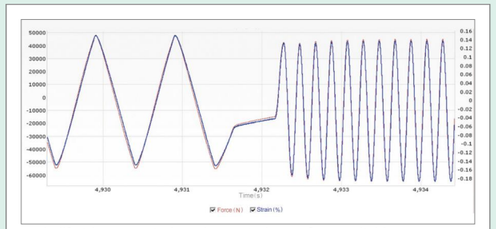
waveforms superimposed on sine and trapezoidal waveforms



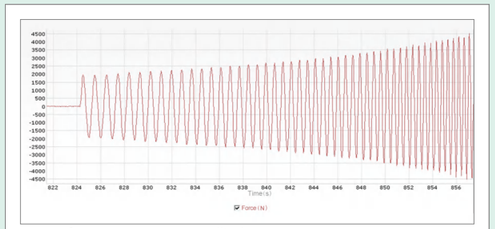
stress, strain maintenance



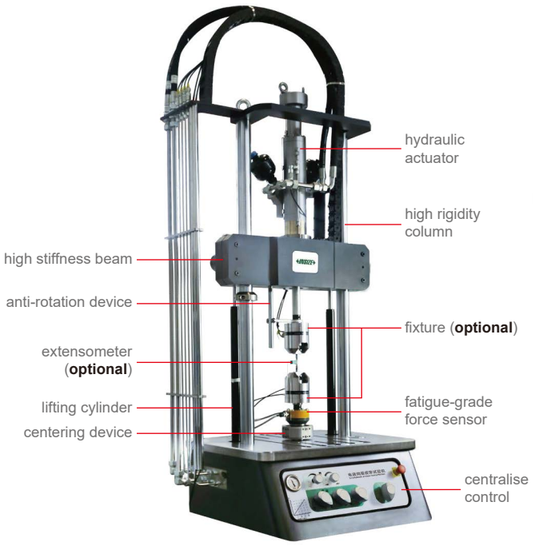
square wave



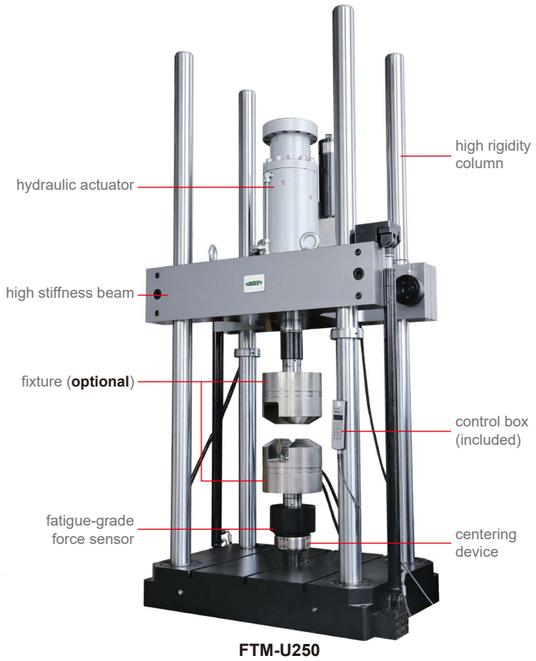
cycle life trigger control mode, control waveform switching



sweep frequency, sweep amplitude



FTM-U25



FTM-U250

SERVOHYDRAULIC FATIGUE TESTING MACHINES (CYLINDER UP-MOUNTED)

ATTENTION: CUSTOMIZED ACCORDING TO TEST METHOD

VIDEO

- According to ASTM D3479, ASTM D7615, GB/T 3075, HB 5287, GB/T 15248, GB/T 6398, GB/T 4161, GB/T 21143, ASTM 1290, ASTM-E399, JJG 556-2011
- Suitable for fatigue testing of composite materials, steel, aluminium alloys, super alloys, etc.
- Suitable for tensile, compression, bending, tension-tension, compression-compression, tension-compression and other mechanical properties of the test

SPECIFICATION

Code	FTM-U10	FTM-U25	FTM-U50	FTM-U100
Max. test force	10kN	25kN	50kN	100kN
Accuracy of static force measurement	±0.5% of indicated value			
Accuracy of dynamic force measurement	±2% of indicated value			
Range of test force	0.5%~100%FS			
Actuator stroke*	±75mm			
Accuracy of displacement measurement	linearity error <40μm, repeatability <0.001%FS			
Range of frequency	0~100Hz			
Concentricity	≤5%			
Vertical test space*	1100mm	1100mm	1120mm	1120mm
Effective test width*	460mm	460mm	540mm	540mm
Test waveform	sine wave, square wave, triangle wave, ramp wave, random wave, spectral loading, sweep frequency, etc.			
Stiffness	1.25×10^8N/m		5×10^8N/m	
Dimension (L×W×H)	800×500×2500mm	800×500×2500mm	870×550×2000mm	870×550×2000mm
Net weight	150kg	150kg	1100kg	1350kg
Power supply	AC 380V, 3Ø, 50Hz			

To be continued

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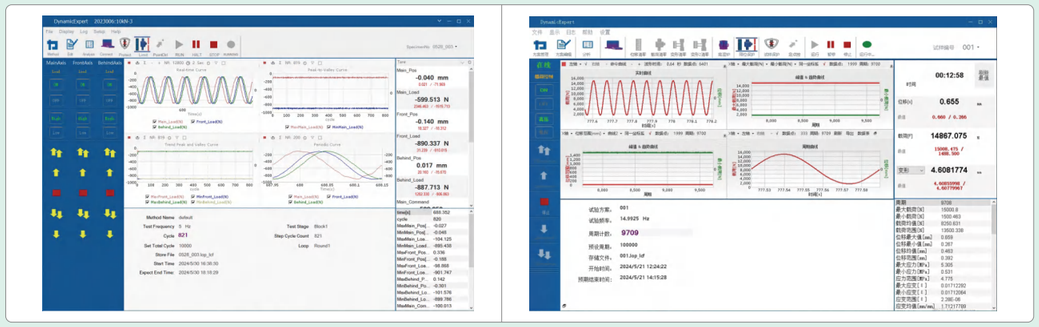


software (included)

SPECIFICATION

Code	FTM-U250	FTM-U500	FTM-U1000	FTM-U2500
Max. test force	250kN	500kN	1000kN	2500kN
Accuracy of static force measurement	±0.5% of indicated value			
Accuracy of dynamic force measurement	±2% of indicated value			
Range of test force	0.5%~100%FS			
Actuator stroke*	±75mm			
Accuracy of displacement measurement	linearity error <40μm, repeatability <0.001%FS			
Range of frequency	0~100Hz			
Concentricity	≤5%			
Vertical test space*	1235mm	2000mm	2600mm	3000mm
Effective test width*	650mm	780mm	600mm	850mm
Test waveform	sine wave, square wave, triangle wave, ramp wave, random wave, spectral loading, sweep frequency, etc.			
Stiffness	6.5×10^8N/m	8×10^8N/m	2.1×10^9N/m	4.2×10^9N/m
Dimension (L×W×H)	1000×640×3200mm	1000×640×3700mm	1100×650×5800mm	1500×850×6500mm
Net weight	2050kg	6200kg	8500kg	12500kg
Power supply	AC 380V, 3Ø, 50Hz			

*Can be customized according to test requirements

WAVEFORM OF WORKING CONDITION (page 53~54)

STANDARD DELIVERY

Main unit	1 pc
Hydraulic oil source	1 set
Main circulating cooling water system	1 set
Control box	1 pc
Measuring software	1 set
Computer	1 pc
Printer	1 pc

OPTIONAL ACCESSORY

Fixture	customized
Extensometer	
High-temperature extensometer	
High and low temperature test chamber	
Temperature and humidity test chamber	
High-temperature furnace	
Security door	
Video extensometer	**UTM-M** series

5 IMPACT TESTING MACHINE

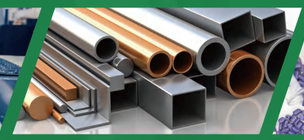
Pendulum impact testing machines are key equipment for testing the impact resistance of materials. By simulating the mechanical response of materials under instantaneous impact loads, they accurately measure critical parameters such as impact toughness and fracture energy, serving as an essential basis for material selection, quality control and R&D.

Classified by the mechanical characteristics of test samples, the products fall into two categories: metal pendulum impact testers and plastic pendulum impact testers. Optimized in energy range, structure and test standards respectively, they are specially designed for impact performance evaluation of metals and plastics (including polymer composite materials).

Application industries

Material selection

Product quality control



Metallic materials

Plastics
(Including polymer composite materials)

Product name	Test standard	Product description
 **ITM-S series Impact testing machines**	GB/T 3808-2018 Verification of pendulum impact testing machines GB/T 229-2020 Metallic materials-Charpy pendulum impact test method JJG 145-2007 Verification regulation for pendulum impact testing machines ISO 148-1: 2016 Metallic materials-Charpy pendulum impact test-Part 1: Test method ASTM E23-23 Standard Test Methods for Notched Bar Impact Testing of Metallic Materials	The metal pendulum impact testing machine is dedicated core equipment for testing the dynamic impact resistance of metallic materials. It is designed for steel, aluminum, titanium alloy, copper, welded joints and other metal materials. By simulating instantaneous impact loads encountered in service, such as mechanical collision, low-temperature brittle fracture and heavy-load impact, it accurately measures key parameters including impact toughness (αk value) and fracture energy, which directly reflect the fracture resistance of metals under dynamic stress. It helps predict the failure risk of metal components in advance. It is used to verify the low-temperature brittle fracture resistance of construction steel for cold regions and the high-temperature impact toughness of materials for aero-engine blades. It serves as an essential testing tool to guarantee product reliability in iron and steel metallurgy, machinery manufacturing, aerospace and other industries.
 **ITM-T series Low temperature automatic impact testing machines**	GB/T 3808-2018 Verification of pendulum impact testing machines GB/T 229-2020 Metallic materials-Charpy pendulum impact test method JJG 145-2007 Verification regulation for pendulum impact testing machines ISO 148-1: 2016 Metallic materials-Charpy pendulum impact test-Part 1: Test method ASTM E23-23 Standard Test Methods for Notched Bar Impact Testing of Metallic Materials	
 **ITM-U32 Impact specimen notch broaching machine**	GB/T 229-2020 Metallic materials-Charpy pendulum impact test method ISO 148-1: 2016 Metallic materials-Charpy pendulum impact test-Part 1: Test method ISO 83: 2016 Metallic materials-Charpy V-notch pendulum impact test-Instrumented test method EN 10045-1: 1990 Metallic materials-Charpy impact test-Part 1: Test method for U-notched and V-notched specimens	Hydraulic Broaching Machine for Impact Specimen Notches As a key pre-processing auxiliary equipment for metal impact testing, this machine is designed to produce standard notched specimens for metal pendulum impact testers, Charpy impact testers and other related devices. It adopts hydraulically driven high-precision broaches to machine V-notches, U-notches and other standard notches on metal specimens in accordance with domestic and international standards. It ensures the notch meets strict requirements on dimensional accuracy, surface roughness and positional precision for impact tests. Since notch quality directly determines the accuracy of core indicators such as impact toughness (ak value), this process is vital to prevent test errors resulting from specimen defects. Widely used in iron and steel metallurgy, machinery manufacturing, aerospace, nuclear power and other industries with stringent requirements on impact test data reliability, it is an indispensable device for full-process quality control of impact tests.
 **ITM-UV series Impact broaches**	/	Exclusive for Hydraulic Broaching Machine for Impact Specimen Notches.
 **ITM-BR series Impact standard samples**	GB/T 3808-2018 Verification of pendulum impact testing machines GB/T 229-2020 Metallic materials-Charpy pendulum impact test method JJG 145-2007 Verification regulation for pendulum impact testing machines ISO 148-1: 2016 Metallic materials-Charpy pendulum impact test-Part 1: Test method ASTM E23-23 Standard Test Methods for Notched Bar Impact Testing of Metallic Materials	Standard impact specimens are used to verify and calibrate the accuracy of impact testing machines. Available types include R2, R8 and low-temperature specimens with various energy levels.
 **ISP-Z series Impact specimen notch projectors**	/	Used to check the notch dimensional accuracy of impact specimens machined by broaching machines.
 **ITM-JA series Charpy impact testing machines**	GB/T 1043-2008 Plastics-Determination of charpy impact properties ISO 179-1:2010 Plastics-Determination of Charpy impact properties-Part 1: Non-instrumented impact test	Plastic Pendulum Impact Tester (Charpy/Izod) is the special core equipment for impact resistance testing of polymer materials. Designed for low-toughness materials such as plastics, rubber, composites and foams, it uses low-energy pendulums to apply accurate impact load on specimens. Supporting both Charpy and Izod test methods, it precisely determines key parameters including impact strength, fracture energy and ductile-brittle transition properties. Tailored for polymer characteristics and compatible with GB/T, ISO, ASTM and other mainstream standards, it meets compliance testing require ments for various industries. It is a vital instrument for impact-resistant design optimization, production quality control and failure analysis of plastic packaging, automotive interiors, electronic enclosures and other products.
 **ITM-JB series Izod impact testing machines**	GB/T 1843-2008 Plastics-Determination of izod impact properties ISO 180-1: 2020 Plastics-Determination of Izod impact properties-Part 1: Non-instrumented impact test	

ITM-S300J

IMPACT TESTING MACHINES

- According to GB/T 3808, GB/T 229, JJG 145, ASTM E23 (with American standard blade), ISO 148.1, ISO 148.2, ISO 148.3, ISO R83
- For testing the anti-impact performance of metal materials under dynamic load
- Capable of performing metal impact tests in large quantities on a continuous basis

low-temperature chamber (**optional**)

To be continued

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SPECIFICATION

Code	ITM-S150J	ITM-S300J	ITM-S450J	ITM-S600J	ITM-S750J
Impact energy	150J	300J	450J	600J	750J
Dial range	0~150J	0~300J	0~450J	0~600J	0~750J
Dial graduation	1J	2J	3J	4J	5J
Pendulum moment	M=80.3848N·m	M=160.7695N·m	M=241.1543N·m	M=321.5390N·m	M=401.9238N·m
Pendulum preparing angle	150°				
Distance between pendulum shaft center and specimen center	750mm				
Impact speed	5.24m/s				
Span of specimen seat	40mm				
End face radius of specimen seat	R (1.0~1.5)mm				
Radius of impact blade	R (2.0~2.5)mm				
Inclination angle of support surface of specimen seat	11°±1°				
Angle of impact blade	30°±1°				
Thickness of impact blade	16mm				
Range of measuring angle	0~360°				
Angle resolution	≤0.06°				
Specimen size	10×10×55mm				
Power supply	AC380V, 3Ø, 50Hz				
Power	400W		1.5kW		
Base size	800×500mm		960×650mm		
Dimension of main body	2050×690×2015mm		2100×835×2200mm		
Net weight	450kg		900kg		

SPECIFICATION OF LOW-TEMPERATURE CHAMBER (OPTIONAL)

Code	ITM-S-40	ITM-S-60	ITM-S-80
Range of temperature	room temperature~-40°C	room temperature~-60°C	room temperature~-80°C
Accuracy of temperature control	±0.5°C		
Evenness	≤1.0°C		
Resolution	0.1°C		
Method of refrigeration	Compressor refrigeration		
Cooling medium	Ethanol or other unfrozen liquid		
Number of specimen	≥60 pcs		
Cooling speed	+25°C~0°C about 1.5°C/min, 0°C~-20°C about 1.2°C/min, -20°C~-40°C about 1.0°C/min	+25°C~0°C about 1.8°C/min, 0°C~-20°C about 1.5°C/min, -20°C~-40°C about 1.3°C/min, -40°C~-60°C about 1.0°C/min	+25°C~0°C about 1.5°C/min, 0°C~-20°C about 1.3°C/min, -20°C~-60°C about 1.0°C/min, -60°C~-80°C about 0.8°C/min
Heating speed	3°C/min		
Timekeeping device	1min~9999min, resolution: 1min		
Volume of refrigeration room (L×W×H)	275×160×120mm		
Effective volume of refrigeration room (L×W×H)	150×140×110mm		
External dimension (L×W×H)	910×510×920mm		
Material of the case	Iron shell spraying moulding		
Power supply	AC220V, 3Ø, 50Hz, 1.8kW	AC220V, 3Ø, 50Hz, 2.3kW	AC220V, 3Ø, 50Hz, 2.5kW

To be continued

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SPECIFICATION OF LOW-TEMPERATURE CHAMBER (OPTIONAL)

Code	ITM-S-80S	ITM-S-100	ITM-S-196*
Range of temperature	room temperature~-80°C	room temperature~-100°C	-20°C~-196°C
Accuracy of temperature control	±0.5°C		±2°C
Evenness	≤1.0°C		≤2.0°C
Resolution	0.1°C		0.1°C
Method of refrigeration	Compressor refrigeration		Liquid nitrogen refrigeration
Cooling medium	Ethanol or other unfrozen liquid		Liquid nitrogen
Number of specimen	≥60 pcs		
Cooling speed	+25°C~0°C about 1.5°C/min, 0°C~-20°C about 1.3°C/min, -20°C~-60°C about 1.0°C/min, -60°C~-80°C about 0.8°C/min	+25°C~0°C about 2.0°C/min, 0°C~-40°C about 1.5°C/min, -40°C~-80°C about 1.3°C/min, -80°C~-100°C about 0.8°C/min	1°C~-3°C
Heating speed	3°C/min		
Timekeeping device	1min~9999min, resolution: 1min		
Volume of refrigeration room (L×W×H)	275×160×120mm		
Effective volume of refrigeration room (L×W×H)	150×140×110mm		
External dimension (L×W×H)	755×555×950mm	1105×705×1110mm	710×600×740mm
Material of the case	stainless steels	Iron shell spraying moulding	stainless steels
Power supply	AC220V, 3Ø, 50Hz, 2.5kW	AC 220V, 3Ø, 50Hz, 3.0kW	AC 220V, 3Ø, 50Hz, 100W

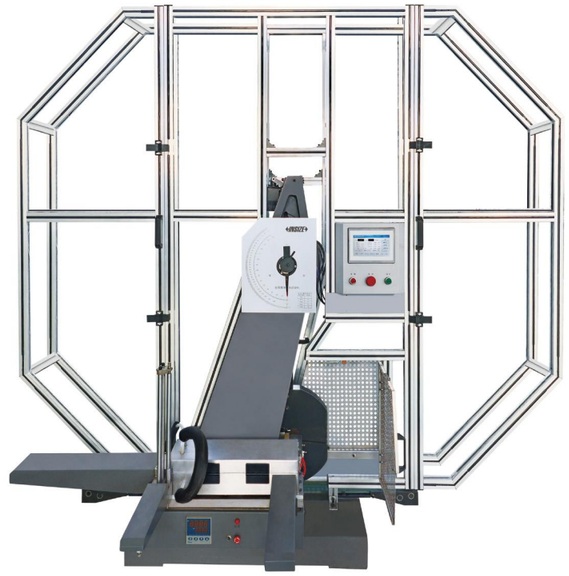
*For test >-20°C, **ITM-S-80** is recommended

STANDARD DELIVERY

Main unit		1 pc
Control cabinet		1 pc
Simply supported beam fixture (including jaws, anvil)		1 set
Pendulum	ITM-S150J	150J pendulum
	ITM-S300J	300J pendulum and 150J pendulum
	ITM-S450J	450J pendulum and 150J pendulum
	ITM-S600J	600J pendulum and 150J pendulum
	ITM-S750J	750J pendulum and 150J pendulum
Span aligner		1 pc
Tongs		1 pc
Safety cover		1 set
Software		1 set
Computer		1 pc
Printer		1 pc

OPTIONAL ACCESSORY

Workbench	7911-15
150J pendulum	ITM-S-PE150J
300J pendulum	ITM-S-PE300J
450J pendulum	ITM-S-PE450J
600J pendulum	ITM-S-PE600J
750J pendulum	ITM-S-PE750J
ASTM standard impact blade	ITM-S-ASTM-IB
Sample recovery device	ITM-S-RD
Digital display screen	ITM-S-DDS
Impact specimen notch projector (GB/T 229, ASTM E23)	ISP-Z2
Low-temperature chamber	ITM-S-40
	ITM-S-60
	ITM-S-80
	ITM-S-80S
	ITM-S-100
	ITM-S-196
Impact specimen notch broaching machine (double broaches)	ITM-U32
Impact standard sample	ITM-BR series



ITM-T300J

LOW TEMPERATURE AUTOMATIC IMPACT TESTING MACHINES

VIDEO

- According to GB/T 3808, GB/T 229, JJG 145, ASTM E23 (with American standard blade), ISO 148.1, ISO 148.2, ISO 148.3, ISO R83
- For testing the anti-impact performance of metal materials under dynamic load
- Capable of performing metal impact tests in large quantities on a continuous basis
- Automatic sample feeding and positioning

software (included)

sample feeding and positioning device (included)

low-temperature chamber (**optional**)

To be continued

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SPECIFICATION

Code	ITM-T150J	ITM-T300J	ITM-T450J	IITM-T600J	ITM-T750J
Impact energy	150J	300J	450J	600J	750J
Dial range	0~150J	0~300J	0~450J	0~600J	0~750J
Dial graduation	1J	2J	3J	4J	5J
Pendulum moment	M=80.3848N·m	M=160.7695N·m	M=241.1543N·m	M=321.5390N·m	M=401.9238N·m
Pendulum preparing angle	150°				
Distance between pendulum shaft center and specimen center	750mm				
Impact speed	5.24m/s				
Span of specimen seat	40mm				
End face radius of specimen seat	R (1.0~1.5)mm				
Radius of impact blade	R (2.0~2.5)mm				
Inclination angle of support surface of specimen seat	11°±1°				
Angle of impact blade	30°±1°				
Thickness of impact blade	16mm				
Range of measuring angle	0~360°				
Angle resolution	≤0.06°				
Specimen size	10×10×55mm				
Base size	960×650mm				
Dimension of main body	2100×835×2200mm				
Net weight	900kg				
Power supply	AC380V, 3Ø, 50Hz				
Power	1.5kW				

SPECIFICATION OF LOW-TEMPERATURE CHAMBER (OPTIONAL)

Code	ITM-T-60	ITM-T-180	ITM-T-196
Range of temperature	room temperature~-60°C	-20°C~-180°C	room temperature~-196°C
Accuracy of temperature control	±0.5°C	±2°C	room temperature~-80°C: ±0.5°C -80°C~-196°C: ±2°C
Evenness	≤1.0°C	≤2.0°C	room temperature~-80°C: ≤1.0°C -80°C~-196°C: ≤2.0°C
Resolution	0.1°C	0.1°C	room temperature~-80°C: 0.1°C -80°C~-196°C: 0.1°C
Method of refrigeration	compressor refrigeration	liquid nitrogen refrigeration	room temperature~-80°C: compressor refrigeration -80°C~-196°C: liquid nitrogen refrigeration
Cooling medium	ethanol or other unfrozen liquid	liquid nitrogen	room temperature~-80°C: compressor refrigeration -80°C~-196°C: liquid nitrogen refrigeration
Cooling speed	+25°C~0°C, about 1.8°C/min 0°C~-20°C, about 1.5°C/min -20°C~-40°C, about 1.3°C/min -40°C~-60°C, about 1.0°C/min	1°C~-3°C	+25°C~0°C, about 2.0°C/min 0°C~-40°C, about 1.5°C/min -40°C~-80°C, about 1.3°C/min -80°C~-196°C, 1°C~-3°C
Heating speed	3°C/min		
Timekeeping device	1min~999min, resolution: 1min		

To be continued

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STANDARD DELIVERY

Main unit		1 pc
Control cabinet		1 pc
Digital display screen		1 pc
Sample feeding and positioning device		1 pc
Sample recovery device		1 pc
Simply supported beam fixture (including jaws, anvil)		1 set
Pendulum	ITM-T150J	150J pendulum
	ITM-T300J	300J pendulum and 150J pendulum
	ITM-T450J	450J pendulum and 150J pendulum
	ITM-T600J	600J pendulum and 150J pendulum
	ITM-T750J	750J pendulum and 150J pendulum
Span aligner		1 pc
Tongs		1 pc
Safety cover		1 set
Software		1 set
Computer		1 pc
Printer		1 pc

OPTIONAL ACCESSORY

150J pendulum	ITM-T-PE150J
300J pendulum	ITM-T-PE300J
450J pendulum	ITM-T-PE450J
600J pendulum	ITM-T-PE600J
750J pendulum	ITM-T-PE750J
ASTM standard impact blade	ITM-T-1
Impact specimen notch projector (GB/T 229, ASTM E23)	ISP-Z2
Low-temperature chamber	ITM-T-60
	ITM-T-180
	ITM-T-196
Workbench	7911-15
Impact specimen notch broaching machine (double broaches)	ITM-U32
Impact standard sample	ITM-BR series

IMPACT SPECIMEN NOTCH BROACHING MACHINE (DOUBLE BROACHES)

CODE ITM-U32

VIDEO

- Conforms with ISO 148, ISO 83 and EN 10045 standards
- Dual-station broach, two specimen notches can be processed at the same time
- One-time broaching forming, hydraulic transmission, special internal lubrication device to avoid damage of the broaches

SPECIFICATION

Broach stroke	350mm (V2, U2, U3 broaches) 400mm (U5 broach)
Specimen size (T×W×L)	10×10×55mm
Broaching speed	0.35-2.5m/min
Driving method	hydraulic
Power supply	380V, 50Hz, 0.4kW
Dimension (L×W×H)	660×400×1200mm
Net weight	200kg

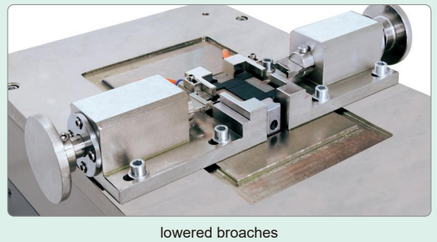
STANDARD DELIVERY

Main unit	1 pc
Broach	U2 and V2

OPTIONAL ACCESSORY

U3 broach	**ITM-U32-U3**
U5 broach	**ITM-U32-U5**

raised broaches



lowered broaches

ITM-UV2

IMPACT BROACHES

- The broach is made of special material and special process, with high hardness, good wear resistance and long service life
- The processed V-notch and U-notch (2mm) can meet the relevant national standards of GB/T 229-2007
- The processing consistency is excellent, which can ensure that the sample is qualified

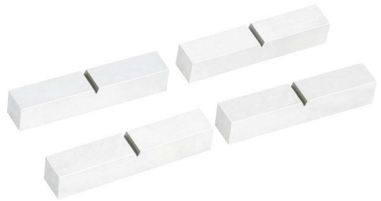
VIDEO

SPECIFICATION

Code	Type of blade	Depth of notch	Radius of bottom	Material	Hardness of material to be cutted
ITM-UV1*	V-shaped	2mm	0.25mm	$W_{18}Cr_4V$	below 42HRC
ITM-UV2*	U-shaped	2mm	1mm	$W_{18}Cr_4V$	below 42HRC
ITM-UV3**	U-shaped	3mm	1mm	-	-
ITM-UV4**	U-shaped	5mm	1mm	-	-

*Hardness of **ITM-UV1** and **ITM-UV2** blade can be customised for special requirements
ITM-UV3 and **ITM-UV4** need to be customised

arc standard samples



V-notch standard samples

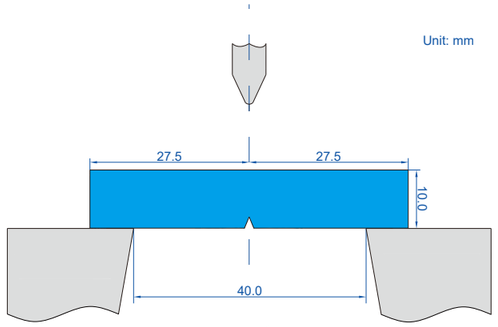


diagram of use

IMPACT STANDARD SAMPLES

INSPECTION CERTIFICATE

- It can avoid the defects of the direct test method that cannot accurately evaluate the measurement accuracy of the impact testing machine
- It can comprehensively verify the measurement characteristics of the impact test machine
- Supplied with manufacturer inspection certificate
- Ability to evaluate the uncertainty of the test machine
- It has two specifications, national standard R2 and American standard R8, with a size of 55×10×10mm
- It can quantitatively verify the accuracy of the measured value of the impact testing machine

SPECIFICATION

Code	Type of notch	Energy level	Impact blade (mm)	Impact value*	Application temperature	Qty
ITM-BR1	arc notch	low: L	R2	28.6J	normal temperature	5 pcs
ITM-BR2	arc notch	medium: M	R2	81.9J	normal temperature	5 pcs
ITM-BR3	arc notch	high: H	R2	127J	normal temperature	5 pcs
ITM-BR5	arc notch	ultra-high: UH	R2	232J	normal temperature	5 pcs
ITM-BR6	arc notch	low: L	R8	29.6J	normal temperature	5 pcs
ITM-BR7	arc notch	medium: M	R8	93J	normal temperature	5 pcs
ITM-BR8	arc notch	high: H	R8	142J	normal temperature	5 pcs
ITM-BR10	arc notch	ultra-high: UH	R8	266J	normal temperature	5 pcs
ITM-BR11	V-notch	low: L	R2	20.7J	normal temperature	5 pcs
ITM-BR12	V-notch	medium: M	R2	107.8J	normal temperature	5 pcs
ITM-BR13	V-notch	high: H	R2	155.9J	normal temperature	5 pcs
ITM-BR14	V-notch	low: L	R8	13.6J	normal temperature	5 pcs
ITM-BR15	V-notch	medium: M	R8	106.1J	normal temperature	5 pcs
ITM-BR16	V-notch	high: H	R8	160J	normal temperature	5 pcs
ITM-BR17	V-notch	low: L	R2	28.6J	-30°C±1°C	5 pcs
ITM-BR18	V-notch	medium: M	R2	81.9J	-30°C±1°C	5 pcs
ITM-BR19	V-notch	high: H	R2	127J	-30°C±1°C	5 pcs
ITM-BR20	V-notch	low: L	R8	29.6J	-30°C±1°C	5 pcs
ITM-BR21	V-notch	medium: M	R8	93J	-30°C±1°C	5 pcs
ITM-BR22	V-notch	high: H	R8	142J	-30°C±1°C	5 pcs

*The actual value may be slightly different when delivered, please refer to the manufacturer inspection certificate.

ISP-Z1

IMPACT SPECIMEN NOTCH PROJECTORS

CAN BE CUSTOMIZED

- Suitable for inspecting the notching quality of impact specimens of Charpy V-notch (depth of 2mm) and U-notch (depth of 2mm)
- Standard sample drawings with tolerances, angle values and depth lines on the screen for intuitive and efficient comparison

VIDEO

SPECIFICATION

Code	ISP-Z1	ISP-Z2
Corresponding standard	GB/T 229	GB/T 229, ASTM E23, ISO 148, ISO 83, EN 10045
Magnification	50X	
Magnification of lens	2.5X	
Magnification of projector lens	20X	
Diameter of projector screen	Ø200mm	
Size of square stage	110×125mm	
Size of round stage	Ø90mm	
Diameter of glass on stage	Ø70mm	
Stroke of stage (X axis)	±10mm	
Stroke of stage (Y axis)	±10mm	
Stroke of stage (Z axis)	±12mm	
Range of stage rotation	0°~360°	
Illumination (tungsten halogen lamp)	12V 100W	
Power supply	AC 220V, 50Hz 150W	
Dimension (L×W×H)	510×220×600mm	
Net weight	20kg	

STANDARD DELIVERY

Main unit	1 pc

ITM-JA50

CHARPY IMPACT TESTING MACHINES (STANDARD TYPE)

INSPECTION CERTIFICATE

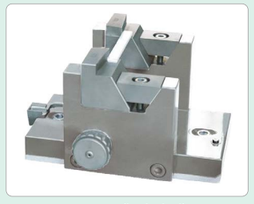
- According to GB/T 1043, GB/T 21189, JB/T 8762, ISO 179
- Locknut-mounted pendulum for easy replacement
- Easy and efficient centering device
- For impact resistance testing of non-metallic materials such as plastics, nylon, rubber, wood, FRP, composite plastic pipes, electrical insulating materials, etc.

SPECIFICATION

Code		ITM-JA5	ITM-JA50
GB/T 1043 ISO 179	Charpy impact energy	0.5J, 1J, 2J, 4J, 5J	7.5J, 15J, 25J, 50J
	radius of the pendulum	230mm	395mm
	impact velocity	2.9m/s	3.8m/s
	pendulum moment	M0.5=0.26795N·m; M1.0=0.53590N·m M2.0=1.07180N·m; M4.0=2.14359N·m M5.0=2.67949N·m	M7.5=4.01924N·m M15.0=8.03848N·m M25.0=13.39746N·m M50.0=26.79492N·m
	angle of the striking edge	30°±1°	
	radius of the striking edge	2±0.5mm	
	radius of the support	1±0.1mm	
	pendulum pre-elevation angle	150°	
	span of the standard support	62mm	
Resolution of energy		0.001J	
Resolution of angle		0.01°	
Power supply		AC 220V, 50Hz, 0.1kW	
Dimension (L×W×H)		700×310×750mm	1200×330×1100mm
Net weight		150kg	200kg

STANDARD DELIVERY

Main unit	1 pc
Charpy pendulum	2 pcs
Pendulum weight	1 set
Jaw (62mm)	1 set
Centering template (62mm)	1 pc
Hex key	1 set
Standard Charpy support	1 pc



support (included)

ITM-JB22

IZOD IMPACT TESTING MACHINES (STANDARD TYPE)

INSPECTION CERTIFICATE

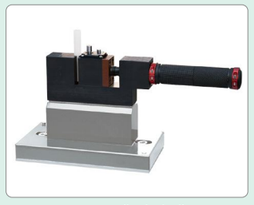
- According to GB/T 1843, GB/T 21189, JB/T 8762, ISO 180
- Locknut-mounted pendulum for easy replacement
- With a safety guard
- For impact resistance testing of non-metallic materials such as rigid plastics, reinforced nylon, fiberglass reinforced plastics (FRP), ceramics, cast stone, electrical insulating materials, etc.

SPECIFICATION

Code		ITM-JB5	ITM-JB22
GB/T 1843 ISO 180	Izod impact energy	1.0J, 2.75J, 5.5J	11J, 22J
	radius of the pendulum	335mm	
	impact velocity	3.5m/s	
	angle of the striking edge	75°±1°	
	radius of the striking edge	0.8±0.2mm	
	rake angle of the cutting edge	5°	
	relief angle of the cutting edge	10°	
	angle of the striking edge	30°±1°	
	distance from striking edge to top surface of the vise	22±0.2mm	
	pendulum pre-elevation angle	150°	
Resolution of energy		0.001J	
Resolution of angle		0.01°	
Power supply		AC 220V, 50Hz, 0.1kW	
Dimension (L×W×H)		1060×320×900mm	
Net weight		120kg	

STANDARD DELIVERY

Main unit		1 pc
Izod pendulum	ITM-JB5	2 pcs
	ITM-JB22	1 pc
Pendulum weight		1 set
Centering template		1 pc
Standard Izod support		1 pc



support (included)

6 ELECTRONIC TORSION TESTING MACHINE

Torsion testing machines are dedicated core devices for evaluating the torsional mechanical properties of materials and components. By applying precise static or dynamic torsional loads, they simulate the actual torsional stress state of shafts, fasteners, plates and other products. They measure key parameters such as torque, torsion angle, shear strength, torsional stiffness and fatigue life, providing reliable data for structural design, quality control and new material development.

Developed to meet the core requirements of accurate torsional load control, compatibility with various specimens and simulation of complex working conditions, the machines are widely used in machinery manufacturing, automotive, aerospace, rail transit and fastener industries. They are essential for torsional performance verification, and mainly divided into two categories: static torsion testing machines and dynamic torsion fatigue testing machines.

Application industries


Machinery manufacturing


Automotive


Aerospace


Rail transit


Fasteners

UTM-TT5
type A

UTM-TT500
type B

ELECTRONIC TORSION TESTING MACHINES

OPTIONAL ACCURACY CLASS: CLASS 0.5

- Suitable for torsion testing of metallic and non-metallic materials, composite materials and components
- Servomotor drive for constant torsion speed
- Cycloid reducer drive for high efficiency and smoothness of transmission
- Electrical control system for high stability, smooth and reliable operation, fast response and low noise
- Efficient and professional control software
- Powerful data and curve analysis
- High-precision linear guide for the coaxiality and parallelism of the equipment
- Automatic torque and torsion angle tracking measurement, load rate indication, peak hold, etc.

VIDEO

SPECIFICATION

Code	UTM-TT2	UTM-TT5	UTM-TT10	UTM-TT30	UTM-TT50
Max. test torque	2N.m	5N.m	10N.m	30N.m	50N.m
Type	A				
Accuracy class	class 1				
Accuracy of test torque	±1% of indicated value				
Range of test torque	2%~100%FS				
Min. resolution of test torque	0.0001N.m	0.0001N.m	0.001N.m	0.001N.m	0.001N.m
Accuracy of torsion angle	±1% of indicated value				
Range of torsion angle	0~9999°				
Resolution of torsion angle	0.01°				
Rated speed of torsion angle	2160°/min				
Accuracy of torsion angle speed	±1% of the set value				
Accuracy of constant load torque	±1% of the set value				
Direction of torsion test	clockwise and count-clockwise operation				
Height of spindle center*	108mm				
Max. distance between collets*	300mm				
Dimension (L×W×H)*	1100×330×450mm				
Net weight*	130kg				
Power supply	AC 220V, 50Hz				

To be continued

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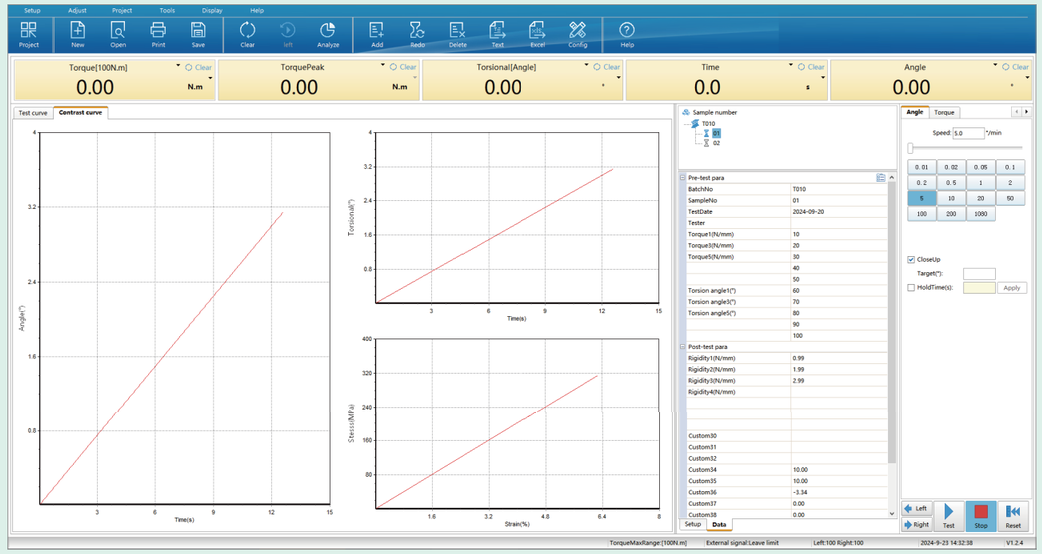


computer and software (included)

SPECIFICATION

Code	UTM-TT200	UTM-TT500	UTM-TT1000	UTM-TT3000	UTM-TT5000
Max. test torque	200N.m	500N.m	1000N.m	3000N.m	5000N.m
Type	B				
Accuracy class	class 1				
Accuracy of test torque	±1% of indicated value				
Range of test torque	2%~100%FS				
Min. resolution of test torque	0.01N.m	0.01N.m	0.1N.m	0.1N.m	0.1N.m
Accuracy of torsion angle	±1% of indicated value				
Range of torsion angle	0~9999°				
Resolution of torsion angle	0.01°				
Rated speed of torsion angle	1080°/min				
Accuracy of torsion angle speed	±1% of the set value				
Accuracy of constant load torque	±1% of the set value				
Direction of torsion test	clockwise and count-clockwise operation				
Height of spindle center*	146mm			203mm	
Max. distance between collets*	500mm				
Dimension (L×W×H)*	1620×400×1020mm			2350×740×1390mm	
Net weight*	260kg			680kg	
Power supply	AC 220V, 50Hz, 0.4kW~1kW			AC 380V, 3Ø, 50Hz, 2kW~4kW	

*Can be customized to adjust according to test requirements

STANDARD DELIVERY

Main unit	1 pc
Measuring software	1 set
Computer	1 pc
Printer	1 pc
Security cover	1 pc

OPTIONAL ACCESSORY

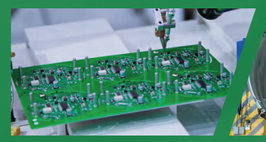
Torsion fixture	customized according to test requirements

7 // SPECIALIZED TESTING MACHINE

Specialized testing machines are customized core equipment for material testing and component performance verification. Tailored for special materials, irregular components, extreme working conditions and niche industry requirements beyond the scope of general-purpose testers, they adopt customized power systems, measurement & control modules, fixtures and analysis software to achieve accurate adaptation, dedicated testing and compliant data output.

They effectively solve the problems of untestable, inaccurate and incomplete testing in high-end manufacturing, special material R&D and major engineering verification. Whether for micro-force testing of semiconductor wafers, high-temperature fatigue testing of aero-engine blades, or in-vivo simulation testing of implantable medical devices, these machines can be customized for exclusive application. They act as a critical performance benchmark for ensuring the reliability of special products, accelerating new material iteration and boosting the upgrading of high-end industries.

Application industries



Semiconductor

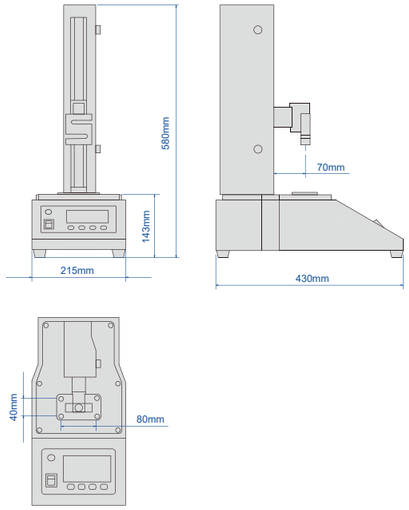
Packaging materials

Electrical assembly

Electronic connectors

Product name	Test standard	Product description
 **UTM-SC series Electronic tensile compression machines**	/	This machine is applicable for routine mechanical performance tests. It can conduct mechanical property testing and analytical research on various metals, non-metals and composite materials. Widely adopted in industries including wires and cables, textiles, fibers, plastics, rubber, food, pharmaceuti cal packaging, thin films and general manufacturing, it can automatically calculate test data such as maximum test force, fracture force, yield strength, upper and lower yield strength, tensile strength and compressive strength.
 **DTM-A series Bond force testers**	/	This equipment is a dynamic mechanical testing instrument dedicated to mechanical performance testing and failure analysis of microelectronic devices after wire bonding. It is primarily applied to wire bonding strength detection, adhesion testing between solder joints and substrate surfaces, and analysis of relevant failure mechanisms. It supports a variety of standardized test items, including wafer shear testing, gold ball shear testing, and gold wire tensile testing. Equipped with a high-speed force acquisition system, the equipment enables accurate and high-speed capture of force signals. Featuring a modular design, the equipment allows flexible replacement of test modules according to different testing requirements. The system can automatically identify the range of each module to adapt to diversified product test scenarios. Each test station is independently configured with safety height and speed limit parameters, which effectively prevent test probe damage caused by misoperation and ensure stable and reliable equipment operation. With the core advantages of fast test response, high measurement accuracy and wide applicability, this equipment is widely used in semiconductor IC packaging, LED packaging, optoelectronic device packaging, PCBA electronic assembly, automotive electronics, aerospace, military industry and other fields. It is also suitable for failure analysis work of electronic technology research institutions and scientific research institutes, as well as teaching and scientific research applications in universities and colleges.
 **STM-A series Friction/Peel testers**	GB/T 10006-2021 Plastics-Film and sheeting-Determination of coefficient of friction GB/T 2790-1995 Test method for 180° peel strength of adhesives-Flexible-to-rigid material assemblies GB/T 2791-1995 Test method for T peel strength of adhesives-Flexible-to-flexible material assemblies GB/T 2792-2014 Test method for peel strength of adhesive tapes ISO 8295:1995 Plastics-Film and sheeting-Determination of the coefficients of friction ISO 8510-2: 2006 Adhesives-Peel test for a flexible-bonded-to-rigid test specimen assembly-Part 2: 180° peel ASTM D1894-24 Standard Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting ASTM D4917-97 (2007) Standard Test Method for Coefficient of Static and Kinetic Friction of Uncoated Writing and Printing Paper by Use of the Horizontal Plane Method ASTM D3330-23 Standard Test Method for Peel Adhesion of Pressure-Sensitive Tapes TAPPI T816 om-21 Standard Test Method for Static and Kinetic Coefficients of Friction of Paper and Paperboard Using the Horizontal Plane Method TAPPI T549 cm-21 Standard Test Method for Coefficient of Friction of Coated and Uncoated Paper and Paperboard Using the Inclined Plane Method	This machine is suitable for measuring the dynamic and static friction coefficients of plastic films, sheets, flakes, paper, paperboards, woven bags, fabrics, metal composite tapes for communication cables and optical cables, conveyor belts, and other textile and papermaking materials. It also applies to the determination of peel strength for adhesive composites, medical patches, release papers, protective films and similar products.
 **DTM-B series Friction testers**	GB/T 10006-2021 Plastics-Film and sheeting-Determination of coefficient of friction ISO 8295: 1995 Plastics-Film and sheeting-Determination of the coefficients of friction ASTM D1894-24 Standard Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting TAPPI T816 om-21 Standard Test Method for Static and Kinetic Coefficients of Friction of Paper and Paperboard Using the Horizontal Plane Method	This machine is suitable for measuring the dynamic and static friction coefficients of plastic films and sheets, rubber, paper, paperboards, woven bags, fabrics, metal composite tapes for communication and optical cables, conveyor belts, wood, coatings, brake pads, windshield wipers, shoe materials and tires. It can also be used to test the smoothness performance of daily chemical products such as cosmetics and eye drops.
 **DTM-C series Electronic peel testers**	GB/T 2790-1995 Test method for 180° peel strength of adhesives-Flexible-to-rigid material assemblies GB/T 2791-1995 Test method for T peel strength of adhesives-Flexible-to-flexible material assemblies GB/T 2792-2014 Test method for peel strength of adhesive tapes ISO 8510-2: 2006 Adhesives-Peel test for a flexible-bonded-to-rigid test specimen assembly-Part 2: 180° peel ASTM D3330-23 Standard Test Method for Peel Adhesion of Pressure-Sensitive Tapes	It is applicable to the peel strength measurement of adhesive composite products, medical patches, release papers, protective films and other similar products.
 **DTM-P series Terminal pull testers**	/	The terminal tensile tester is a professional testing device used to evaluate the tensile mechanical properties of terminals, wire harnesses and connecting parts. It is mainly used to accurately measure the pull-out force between terminals and wires, solder joint bonding strength, and tensile fracture strength of materials. By simulating the actual stress conditions of terminals in service, it obtains key data such as tensile force, displacement and failure modes. It provides core technical support for the reliability verification, quality control and failure analysis of terminal connections. It is widely applied in fields with strict requirements for connection reliability, including electronic wire harnesses, automotive electronics and household appliance manufacturing.
 **PTM-Y series Paperboard compression testing machines**	GB/T 2679.8, GB/T 6546, GB/T 22874, GB/T 6548, GB/T 2679.6 ISO 12192, ISO 3037, ISO 3035, ISO 150 7263, ISO 16945 TAPPI T822, TAPPI T839, TAPPI T825, TAPPI T809, TAPP 843	The paper board compression tester is a core precision device for packaging inspection. It is capable of conducting multiple tests including ring crush and edge crush tests, suitable for various paper samples. Featuring a test accuracy of ±0.5% and an intelligent operation interface, the machine complies with a number of domestic and international standards. Widely applied in the papermaking industry and third-party testing institutions, it serves as key equipment for quality control, process optimization and certification support.

UTM-SC1000



ELECTRONIC TENSILE COMPRESSION MACHINES

CUSTOMIZABLE

VIDEO

- Suitable for tensile, peeling and tearing tests of metal wires, metal foils, plastics, food packaging, textile fibres, wires and cables, adhesives, connectors and other industries
- Automatically obtain the maximum force, tensile strength, compressive strength, elongation at break, average peeling strength, average peeling force and other test data
- Fixed force test, fixed displacement test, fixed deformation test and cycle test can be realised
- Overload emergency shutdown protection device, up and down travel limit protection device
- Leakage automatic power-off system, automatic break stop function

SPECIFICATION

Code	UTM-SC100	UTM-SC200	UTM-SC500	UTM-SC1000
Max. test force	100N	200N	500N	1000N
Accuracy class	class 0.5			
Test force measurement range	0.4%~100%FS			
Test force measurement accuracy	±0.5% of indicating value			
Test force measurement resolution	0.01N			
Deformation measurement resolution	0.001mm			
Displacement range*	0~300mm			
Displacement accuracy	±0.5% of indicating value			
Displacement resolution	0.001mm			
Displacement speed adjustment range	0.1~500mm/min			
Effective tensile travel*	150mm			
Power supply	AC110~220V, 50/60Hz			
Dimension (L×W×H)	430×215×580mm			
Net weight	15kg			

*Can be customized according to test requirements

To be continued

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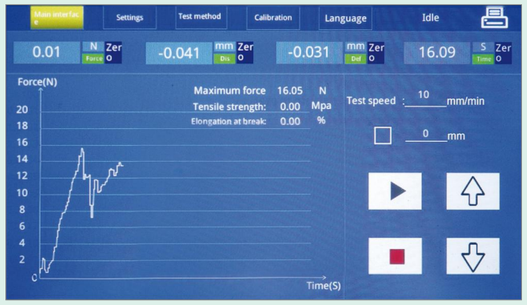

test interface

tensile fixture (included)

compression fixture (included)

printer (**optional**)

STANDARD DELIVERY

Main unit	1 pc
Tensile fixture	1 set
Compression fixture	1 set

OPTIONAL ACCESSORY

Fixture	customized, selection of specifications according to test requirements
Printer	UTM-SC-TP

DTM-A140

BOND FORCE TESTERS

ATTENTION: THE TEST MODULES MUST BE CONFIGURED

- Suitable for testing the strength of microelectronic after bonding, and adhesion testing between solder and substrate surfaces, and failure analysis
- The corresponding test module can be replaced according to the need, and the system automatically identifies the module parameter information
- Fast, accurate and widely applicable
- With landing protection function to prevent damage to the test probe by misoperation
- Suitable for wire pull, bond shear, ball shear, die shear test
- The equipment adopts air suspension bearings, which provide extremely low touchdown force and won't damage the substrate
- Powerful software, easy to operate, support for custom path editing
- Perfect data analysis function, support MES interface interconnection

VIDEO

To be continued

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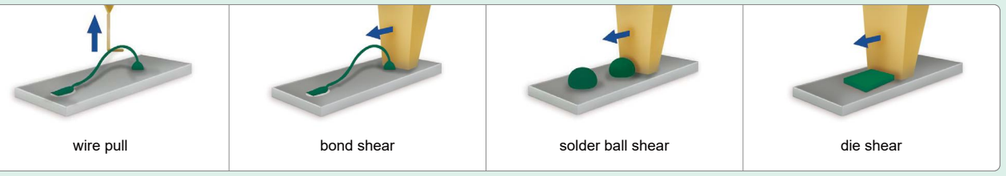
measurement schematic



SPECIFICATION

Code	DTM-A140	DTM-A160	DTM-A200	DTM-A320
Max. load capacity	200kg	200kg	200kg	50kg
Axis travel (X×Y×Z)	140×140×65mm	160×160×75mm	200×200×100mm	320×320×75mm
Speed	0.1~200mm/min	0.1~500mm/min	0.1~500mm/min	0.1~1000mm/min
Min. travel distance of Z-axis	0.25μm	0.1μm	0.1μm	0.1μm
Plate dimension	230×230mm	290×290mm	330×330mm	Ø320mm
Accuracy of force	±0.1%FS			
Resolution of ADC	24bit			
Sampling frequency	5000Hz			
Vacuum supply	0.4~0.6MPa, flow rate: ≤15L/min			
Power supply	AC220V 50Hz, 2kW			
Dimension (L×W×H)	680×617×685mm	680×604×781mm	680×644×814mm	680×762×790mm
Net weight	100kg	100kg	100kg	120kg

SPECIFICATION OF TEST MODULES (OPTIONAL)

Code	Application	Selectable load sub-ranges			
DTM-AWP100G	wire pull test	100g	50g	25g	10g
DTM-AWP1KG		1kg	500g	250g	100g
DTM-AWP5KG		5kg	2.5kg	1kg	500g
DTM-AWP10KG		10kg	5kg	2.5kg	1kg
DTM-AWP20KG*		20kg	10kg	5kg	2.5kg
DTM-ABS250G	shear test	250g	100g	50g	25g
DTM-ABS5KG		5kg	2.5kg	1kg	500g
DTM-ADS50KG		50kg	20kg	10kg	4kg
DTM-ADS100KG		100kg	50kg	20kg	10kg
DTM-ADS200KG*		200kg	100kg	40kg	20kg

STANDARD DELIVERY

Main unit	1 pc	Software	1 set
Control box	1 set	Microscope	1 set
Computer	1 set	Mechanical clamping fixture	1 set

OPTIONAL ACCESSORY

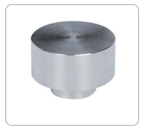
Shear calibration fixture (1: 1)	DTM-A-J1	Calibration weight	customized*
Shear calibration fixture (1: 2)	DTM-A-J2	Pull hook	
Shear calibration fixture (1: 40)	DTM-A-J40	Shear fixture	
Pull calibration fixture	DTM-A-JP	Vacuum adsorption test fixture	
Camera	DTM-A-P1	Vacuum pump	

*Can be customized according to test requirements

STM-A10

slider (200g) (included)

connector (included)



weight (300g) (included)

retainer block (included)

peel fixture (included)

FRICTION/PEEL TESTERS

- According to GB/T 10006, GB/T 2790, GB/T 2791, GB/T 2792, ISO 8295, ISO 8510-2, ASTM D1894, ASTM D4917
- Equipped with USB interface, professional measurement and control software, you can control the instrument through the software to complete the test
- Suitable for plastic film, foil, paper, cardboard, fabrics, communication cables and cables with metal materials composite belt, conveyor belt, paper and other related materials, dynamic and static coefficient of friction and adhesive composite products, medical patches, paper, protective film and other products, peel strength determination
- Wide-range, high-precision temperature control device easily realises testing of specimens at different temperatures
- Seven-inch industrial touch screen, man-machine interface stylish,convenient
- Infinitely variable speed, multi-speed adjustable, to meet the different needs of customers
- The standard test bench and test slider are demagnetised and tested for residual magnetism, effectively reducing systematic testing errors
- The system is controlled by a computer and a microprocessor, making it easy for the user to carry out the test quickly

VIDEO

SPECIFICATION

Code	STM-A05	STM-A10	STM-A30
Max. test force	5N	10N	30N
Accuracy of test force	±0.5%		
Resolution of test force	0.001N		
Range of test force	0.5%~100%FS		
Range of speed adjustment	1~600mm/min		
Weight of slider	200g		
Dimension (L×W×H)	850×350×290mm		
Net weight	30kg		
Power supply	AC 220V, 50Hz		

STANDARD DELIVERY

Main unit	1 pc
Slider (200g)	1 pc
Connector	1 pc
Weight (300g)	1 pc
Retainer block	1 pc
Peel fixture	1 set
Ø6 polyurethane tube (5m)	1 pc
Fuse	3 pcs
Test board (50×125mm)	3 pcs

OPTIONAL ACCESSORY

Professional software*		STM-AF1
Communication cable		STM-AF2
Standard press roller		STM-AF3
Slider (100g)		STM-AF4
Weight (800g)		STM-AF5
Weight (1614g)		STM-AF6
Weight (1800g)		STM-AF7
Test board (40×180mm)		STM-AF8
Stainless steel sampling knives	10mm	STM-AF9
	15mm	STM-AF10
	20mm	STM-AF11
	25mm	STM-AF12
	25.4mm	STM-AF13
Stainless steel sampling blade (10pcs)		STM-AF14
Non-standard fixture		customized, selection of specifications according to test requirements

***STM-AF2** is required when purchasing **STM-AF1**

DTM-B10

FRICTION TESTERS

INSPECTION CERTIFICATE

- According to GB/T 10006, ISO 8295, ASTM D1894, TAPPI T816 and HG/T 2729
- Suitable for measuring the static and dynamic friction coefficients of materials such as plastic films, sheets, rubber, paper and paperboard, fabrics, metal composite tapes for communication cables and optical cables, conveyor belts, wood, coatings, brake pads, windshield wipers, shoe materials, etc.
- Equipped with a 7-inch touch screen, featuring a stylish and convenient human-machine interface
- It enables stepless speed regulation and operates stably
- Both the test bench surface of the instrument and the test slider have undergone degaussing treatment and residual magnetism detection, effectively reducing the system test error
- Equipped with a USB communication interface

SPECIFICATION

Code	DTM-B05	DTM-B10	DTM-B30
Max. test force	5N	10N	30N
Accuracy of test force	±0.5%		
Resolution of test force	0.001N		
Range of test force	0.5%~100%FS		
Range of speed adjustment	1~800mm/min		
Weight of slider	200g		
Power supply	AC 220V, 50Hz		
Dimension (L×W×H)	800×390×260mm		
Net weight	25kg		

STANDARD DELIVERY

Main unit	1 pc
Slider (200g)	1 pc
Connector	1 pc
Weight (300g)	1 pc
Retainer block	1 pc

OPTIONAL ACCESSORY

Slider (100g)	DTM-B-1
Weight (800g)	DTM-B-2
Weight (1614g)	DTM-B-3
Weight (1800g)	DTM-B-4
Non-cushioned connector	DTM-B-5
Non-standard fixture*	customized

*Selection of specifications according to test requirements

slider (200g) (included)

connector (included)

weight (300g) (included)

retainer block (included)

DTM-CA30

DTM-CB50

ELECTRONIC PEEL TESTERS

INSPECTION CERTIFICATE

- According to GB/T 4850, GB/T 7754, GB/T 8808, GB/T 13022, GB/T 7753, GB/T 17200, GB/T 2790, GB/T 2791, GB/T 2792, QB/T 2358, YYT 0507, YYT 0148, JIS-Z 0237, HG/T 2406-2002
- Industrial touch screen, easy operation
- Test results can be output for group statistical analysis
- Suitable for the peeling, shearing and pulling off performance test of adhesive, release paper, adhesive tape, self-adhesive, composite film, artificial leather, woven bag, film, paper, electronic carrier tape and other products
- Three measurement modes: maximum, real-time and average values

SPECIFICATION

Code	DTM-CA05	DTM-CA30	DTM-CA50	DTM-CA100	DTM-CB30	DTM-CB50	DTM-CB100	DTM-CB200
Max. test force	5N	30N	50N	100N	30N	50N	100N	200N
Accuracy of test force	±0.5%							
Resolution of test force	0.001N							
Range of test force	0.5%~100%FS							
Range of speed adjustment	1~500mm/min							
Width of specimen	30mm (included)/50mm (**optional**)							
Stroke	400mm				650mm			
Power supply	AC 220V, 50Hz							
Dimension (L×W×H)	750×300×165mm				965×390×360mm			
Net weight	18kg				27kg			

STANDARD DELIVERY

Main unit	1 pc
Peel fixture	1 pc

OPTIONAL ACCESSORY

Test board (50×125mm, 3pcs)		DTM-C-1
Standard press roller		DTM-C-2
Stainless steel sampling knives	10mm	DTM-C-3
	15mm	DTM-C-4
	20mm	DTM-C-5

Stainless steel sampling knives	25mm	DTM-C-6
	25.4mm	DTM-C-7
Stainless steel sampling blade (10pcs)		DTM-C-8
Non-standard fixture*		customized

*Selection of specifications according to test requirements

DTM-PA1K

TERMINAL PULL TESTERS (BASIC TYPE)

CUSTOMIZABLE INSPECTION CERTIFICATE

- Suitable for terminal pull force testing, adapts to various wire harness terminal production and quality inspection scenarios, and is widely used in industries such as electronic manufacturing, automotive wire harnesses, communication equipment and home appliances
- One-click testing, automatic reset, flexible testing, reliable data
- Built-in 28 standard test programs and 16 modifiable programs
- The chuck is suitable for wires and terminals of various specifications, and can be customized for special requirements

SPECIFICATION (WITHOUT PRINTER)

Code	DTM-PA500	DTM-PA1K	DTM-PA3K	DTM-PA10K
Max. test force	500N	1kN	3kN	10kN
Accuracy	±1%			
Unit	N, kgf, lbf			
Test method	retention method, pull-out method			
Speed	1~600mm/min			1~800mm/min
Dimension (L×W×H)	430×180×210mm		480×260×290mm	710×490×295mm
Net weight	10kg		20kg	65kg
Power supply	AC 220V, 50Hz			

SPECIFICATION (WITH PRINTER)

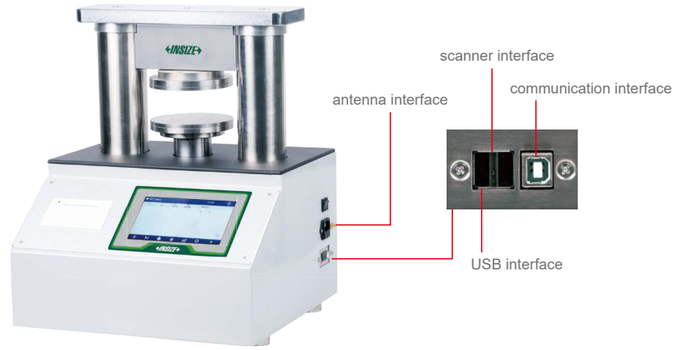
Code	DTM-PB500	DTM-PB1K	DTM-PB3K	DTM-PB10K
Max. test force	500N	1kN	3kN	10kN
Accuracy	±1%			
Unit	N, kgf, lbf			
Test method	retention method, pull-out method			
Speed	1~600mm/min			1~800mm/min
Output	with printer			
Dimension (L×W×H)	430×180×210mm		480×260×290mm	710×490×295mm
Net weight	10kg		20kg	65kg
Power supply	AC 220V, 50Hz			

STANDARD DELIVERY

DTM-PA□□□	Main unit	1 pc
	Hexagon socket wrench	1 set

STANDARD DELIVERY

DTM-PB□□□	Main unit	1 pc
	Printer	1 pc
	Hexagon socket wrench	1 set



PTM-Y3000

PAPERBOARD COMPRESSION TESTING MACHINES

INSPECTION CERTIFICATE

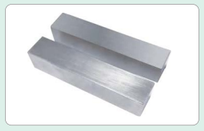
- According to GB/T 22876, ISO 13820, ISO 3035, ISO 3037, ASTM D642, TAPPI T809
- High-precision sensor, dual guide shafts, ball screw drive
- 7" HD touchscreen, displaying real-time pressure curves
- Power-off data storage, automatic reset on overrange
- Unit: N, kgf, lbf
- 50 test data storage, USB data export, thermal printing

SPECIFICATION

Code	PTM-Y3000	PTM-Y5000
Measuring range	150~3000N	250~5000N
Accuracy of test force	±0.5%	
Repeatability of test force	≤0.5%	
Resolution of test force	0.1N	
Work schedule	80mm	
Parallelism of upper and lower pressure plate	≤0.03mm	
Test speed	12.5±1mm/mim (1~300mm/mim adjustable)	
Return speed	≤300mm/mim	
Power supply	AC 220V, 50/60Hz	
Dimension (L×W×H)	415×370×510mm	
Net weight	58kg	

STANDARD DELIVERY

Main unit	1 pc
Wi-Fi antenna	1 pc
Side pressure block	2 pcs



side pressure block (included)

OPTIONAL ACCESSORY

Concora medium fluter	PTM-YF175
Scanner	PTM-N-SCAN
Central disk for ring compression	PTM-Y-DISC
Flat pressure sampler	PTM-Y-FLAT
Ring pressure sampler	PTM-Y-RING
Edge pressure sampler	PTM-Y-EDGE
Adhesion test stand	PTM-Y-ADHESION

concora medium fluter (**optional**)

8 PROCESS-SPECIFIC TESTING MACHINES

Process testing equipment serves as an essential support for the full-cycle quality control throughout manufacturing, from process design to finished product delivery. It is specially developed to verify the machinability of materials, forming quality of components and service reliability, covering core procedures including specimen preprocessing, mechanical property verification and dedicated forming adaptability tests.

By accurately simulating actual production and service conditions, such equipment collects data on the process response of materials and components. It enables pre-verification of process parameter rationality and avoids defects detected after mass production. Widely applied in metal processing, pipe manufacturing, automotive parts, aerospace components and other sectors, it acts as a core tool to achieve precise processing and high-quality mass production.

Application industries

Metal processing

Iron and steel metallurgy

Plate processing

Machinery manufacturing

Product name	Test standard	Product description
 STM-G series Gauge marking instruments (marking point)  STM-H series Gauge marking instruments (marking line)	GB/T 228.1 Metallic materials-Tensile testing-Part 1: Method of test at room temperature GB/T 228.2 Metallic materials-Tensile testing-Part 2: Method of test at elevated temperature GB/T 228.3 Metallic materials-Tensile testing-Part 3: Method of test at low temperature ISO 6892-1 Metallic materials-Tensile testing-Part 1: Method of test at room temperature	The gauge marking instrument is a precision marking device dedicated to pre-processing for material mechanical property tests. Its core function is to accurately mark equidistant gauge points or lines on the surface of metallic, non-metallic and composite specimens. It provides reference marks for measuring key indicators such as elongation and reduction of area in subsequent tensile, bending and other tests. As an indispensable pre-processing auxiliary device, it is widely used for material performance testing in metal processing, automobile manufacturing, aerospace, building materials and other industries.
 STM-D series Steel bar bending testing machines	GB/T 1499.2-2018 Steel for the reinforcement of concrete-Part 2: Hot rolled ribbed steel bars GB/T 28900-2012 Test methods of steel for concrete reinforcement YB/T 5126-2016 Welded steel mesh for concrete reinforcement ISO 10065:2017 Steel for the reinforcement of concrete-Welded fabric-Specification	Steel bar bending testing machine is a precision testing device specially designed to evaluate the bending mechanical properties of steel bars and reinforcing steel for concrete structures. It simulates the bending stress conditions of Steel bars in construction projects, and conducts forward bending, reverse bending and repeated bending tests. The equipment can accurately measure key mechanical indicators including bendability, crack resistance and yield strength. It serves as core equipment for quality inspection of finished Steel bars, incoming acceptance in construction projects and material research, and is widely applied in iron and steel metallurgy, construction engineering, quality inspection institutions and other fields.
 STM-E1 Vertical bending testing machine	GB/T 232-2022 Metallic materials-Bend test method YB/T 5126-2016 Welded steel mesh for concrete reinforcement	Compared with Steel bar bending testing machines, the vertical bending testing machine offers the following advantages: During cold bending of specimens, after one-step forming, the lateral auxiliary cylinder applies compression force to achieve interference bending. This eliminates residual stress, ensuring the bending angle remains accurately at 180° after unloading.
 STM-F1 Metallic material reverse bending testing machine	GB/T 238-2024 Metallic materials-Reverse bend test method for wire GB/T 235-2023 Metallic materials-Reverse bend test method for sheet and strip GB/T 21839-2019 Test methods for steel for prestressed concrete	This machine is mainly used for repeated bending tests of metal wires and plates, to examine the plastic deformation resistance and detect defects of metallic materials under cyclic bending. It is widely applied in iron and steel, construction, steel wire rope, electric wire and cable industries.
 STM-C1 Friction and wear testing machine	NB/SH/T 0189-2019 Determination of anti-scuffing property of lubricants-Four-ball machine method ASTM D3702-23 Standard Test Method for Evaluating the Scuffing Load Capacity of Oils Using a High-Frequency, Linear-Oscillation (SRV) Test Machine ASTM G99-17 (2023) Standard Test Method for Wear Testing with a Pin-on-Disk Apparatus	1. This machine can conduct friction simulation tests between different friction pairs under variable conditions, including temperature, load, speed, friction pair materials, surface roughness and hardness of friction pairs, as well as lubrication modes such as dry lubrication, drip feed lubrication and oil bath lubrication. 2. It is capable of simulating rolling friction, sliding friction and combined rolling-sliding friction. Equipped with various friction pairs, including pin-on-disc (large disc with single pin and three pins), four-ball, thrust ring and ball-on-disc assemblies, it can perform friction simulation tests for point, line and surface contact. The equipment is used to evaluate the friction and wear properties of lubricants, metals, paints, coatings, rubber, ceramics and other materials. 3. Widely applied in various tribology fields, this machine meets the friction and wear testing requirements for the development and inspection of medium-grade oils and greases, as well as the research on new materials and processes for users in petroleum, machinery, energy, metallurgy, aerospace and other industries engaged in tribological studies.

STM-G1

STM-G4

GAUGE MARKING INSTRUMENTS (MARKING POINT)

- According to ISO 6892-1
- Suitable for marking tensile specimen of metal bar
- The percentage elongation after franture of a material can be accurately measured by uniformly distributed markers on the specimen to assess the mechanical property of the material

VIDEO

SPECIFICATION

Code	STM-G1	STM-G2	STM-G3	STM-G4
Marking method	manual	electric		pneumatic
Spacing of markers	10mm	5/10mm	10mm	5/10mm
Number of markers	30 points	1 point	40 points	1 point
Max. gauge	300mm	300mm	400mm	500mm
Accuracy	±0.1mm	±0.05mm	±0.05mm	±0.05mm
Specificity	multipoint quick and easy	high-accuracy highly efficient easy operation	high-accuracy highly efficient easy operation	high-accuracy highly efficient marking force can be adjusted
Power supply	-	AC 220V, 50Hz		
Dimension (L×W×H)	490×200×300mm	460×315×450mm	710×315×450mm	810×350×520mm
Net weight	22kg	25kg	30kg	60kg

STANDARD DELIVERY

Main unit	1 pc

OPTIONAL ACCESSORY

Air pump*	STM-G-1

*For **STM-G4**

STM-H2

GAUGE MARKING INSTRUMENTS (MARKING LINE)

- According to ISO 6892-1
- Suitable for marking tensile specimen of metal sheet
- The percentage elongation after franture of a material can be accurately measured by uniformly distributed markers on the specimen to assess the mechanical property of the material

VIDEO

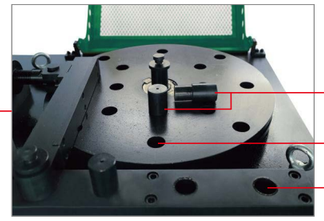
SPECIFICATION

Code	STM-H1	STM-H2	STM-H3
Marking method	electric	laser	
Spacing of markers	5/10mm	settable	
Number of markers	1 point	settable	
Max. gauge	300mm	300mm	400mm
Accuracy	±0.05mm	±0.02mm	
Specificity	high-accuracy highly efficient easy operation	marking speed: ≤3000mm/s marking depth: ≤0.3mm minimum line width: 0.004mm scope of marking: 100×100mm connector for communication: USB2.0	
Power supply	AC 220V, 50Hz		
Dimension (L×W×H)	560×400×450mm	1100×740×1460mm	
Net weight	40kg	230kg	

STANDARD DELIVERY

Main unit	1 pc

STM-D40



worktable

control panel

STEEL BAR BENDING TESTING MACHINES

ATTENTION: STANDARD TEST BEND CORES ARE NEEDED FOR TESTING

- According to GB/T 1499.2, GB/T 28900, YB/T 5126, ISO 10065
- Cold bending test and plane rebending test of steel bars can be carried out

VIDEO

SPECIFICATION

Code	STM-D40	STM-D50
Range of steel bar diameter (hot-rolled ribbed-steel bar)	Ø6~Ø40mm	Ø6~Ø50mm
Angle of bend	0~180°	
Angle of rebend	0~180°	
Diameter of worktable	Ø560mm	Ø860mm
Rotate speed of worktable	≤1.4r/min	
Distance of roll center	245mm	366mm
Dimension	1000×750×1200mm	1320×1185×1380mm
Net weight	750kg	2000kg
Power supply	AC 380V, 3Ø, 50Hz 1.5kW	AC 380V, 3Ø, 50Hz 3kW

STANDARD DELIVERY

Main unit	1 pc
Work axis	7 pcs

OPTIONAL ACCESSORY

Standard test bend core*	customized

*Selection of specifications according to test requirements

VERTICAL BENDING TESTING MACHINE

CODE STM-E1

ATTENTION: STANDARD TEST BEND CORES ARE NEEDED FOR TESTING

- Suitable for metal and non-metal bending test, such as steel bar, steel plate, etc.
- Easy core replacement with support roller bending device

VIDEO

SPECIFICATION

Angle of bend	0~180°
Length of bending indenter	≥150mm
Size of support roller	Ø40×140mm
Max. system pressure*	25MPa
Max. test force for longitudinal bending*	500kN
Working stroke of longitudinal piston*	270mm
Max. clamping force*	250kN
Stroke of single piston*	150mm
Resolution of displacement	0.01mm
Dimension (L×W×H)	1520×650×1920mm
Net weight	1000kg
Power supply	AC 380V, 3Ø, 50Hz 1.5kW

*Can be customized according to test requirements

STANDARD DELIVERY

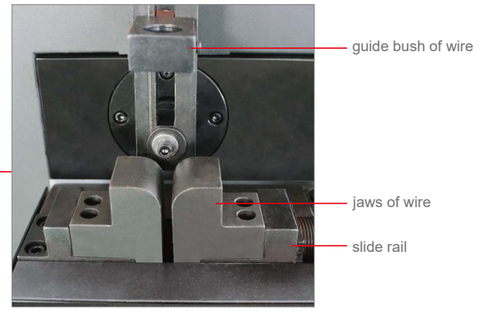
Main unit	1 pc

OPTIONAL ACCESSORY

Microcomputer control system	STM-E-1
Standard test bend core**	customized

**Selection of specifications according to test requirements

standard test bent core (**optional**)



wire fixture (included)

METALLIC MATERIAL REVERSE BENDING TESTING MACHINE

CODE STM-F1

- Suitable for reverse bending test of metal wire and sheet
- Used to test the plastic deformation resistance and reveal the defects of metal materials during reverse bending

VIDEO

SPECIFICATION

Diameter of wire	Ø(0.3~10)mm
Length of wire	≥200mm
Thickness of sheet	0.3~3mm
Length of sheet	≥200mm
Angle of reverse bending	90°±1°
Frequency of bending	≤60 times/minute
Range of count	1~99999 times
Dimension (L×W×H)	600×350×670mm
Net weight	230kg
Power supply	AC 380V, 3Ø, 50Hz 1.5kW

STANDARD DELIVERY

Main unit	1 pc
Tensioning device	1 set
Jaws of wire	1 set
Guide bush of wire	1 set

OPTIONAL ACCESSORY

Jaws of sheet	STM-F-1
Guide bush of sheet	STM-F-2

FRICTION AND WEAR TESTING MACHINE

CODE STM-C1

VIDEO

- According to NB/SH/T 0189, ASTM D3702, ASTM G99
- The friction simulation test between different friction parts can be realised under various conditions such as changing temperature, load, speed, friction part material, friction part surface roughness, hardness and lubrication status (oil-free lubrication, oil-drip lubrication or oil-immersion lubrication)
- The machine can simulate rolling, sliding and rolling-sliding compound motion friction form, with a variety of friction sub, such as pin disc (with a large disc and small disc, single needle and three needle) friction sub, four ball friction sub, thrust ring, ball disc and so on
- The machine can complete a variety of point, line and surface friction simulation experiments, can be used to evaluate the lubricant, metal, paint, coatings, rubber, ceramics and other materials friction and wear performance

SPECIFICATION

Maximum axial test force	1000N
Accuracy of axial force	±1%
Load rate of axial test force	400N/min
Retention capacity of axial test force	±1%
Range of friction sensor	200N
Length of friction arm	50mm
Maximum friction torque	2.5N·m
Accuracy friction torque	±2%
Range of spindle speed	5~2000r/min
Accuracy of spindle speed	±1%
Taper of tester spindle	1:7
Maximum distance between spindle and lower sub-disc	>75mm
Timekeeping device	10s~9999min
Range of RPM counter	(1~99)×10^5 times
Dimension of main body	860×740×1560mm
Net weight	550kg
Power supply	AC 220V, 50Hz

STANDARD DELIVERY

Main unit	1 pc
Pin and disc friction vice	1 set
Computer	1 pc
Printer	1 pc

OPTIONAL ACCESSORY

Ball and disc friction vice	STM-CF1
Disc and disc friction vice	STM-CF2
Tube heater	STM-CF3
Special accessories	customized

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