



## PENDULUM IMPACT TESTER SERIES H

### STANDARD

ASTM E23, ASTM E1820, ASTM E2298, ISO 148, EN10045, ISO 148, EN10045, ISO 14556, JIS Z 2242, GOST 9454-78

RoboTest Series H Pendulum Impact Tester consists of a heavy solid steel base on which the specimen holder (anvil) and a heavy-duty cast steel upright are mounted.

### IMPACT ENERGY

750J, 600J, 450J, 300J

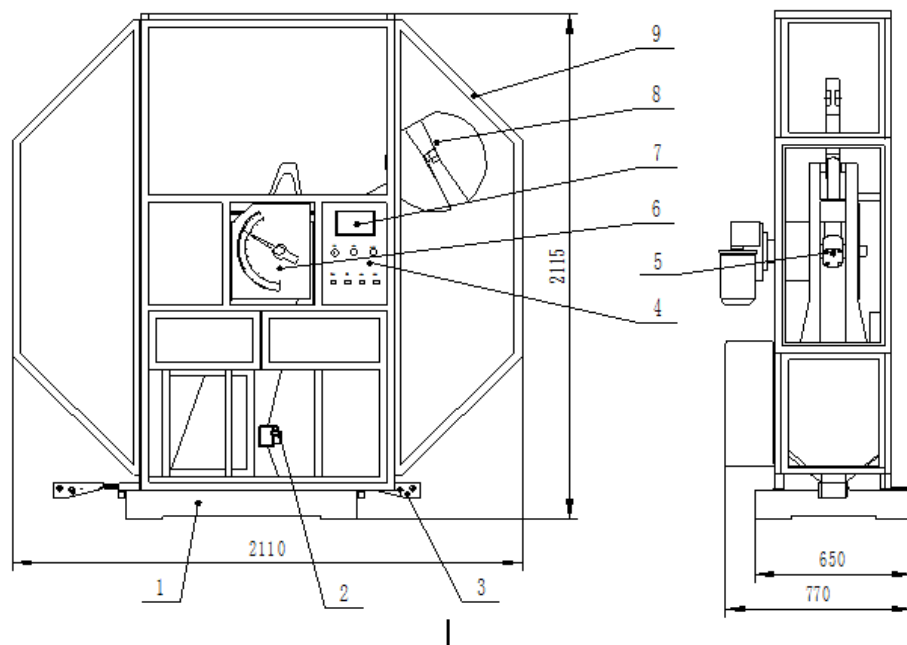


## APPLICATION

- Impact on metals, Charpy and Izod, both non-instrumented and instrumented
- Servo motor driven pendulum can stop at any position, realizing different angle/energy impact test for R&D use
- Equipped with cooling system, I can perform low temperature test down to -180°C

## MACHINE STRUCTURE

The basic model consists of a heavy steel base on which the specimen holder (anvil) and a heavy-duty cast steel upright are mounted.



- |                              |                                |
|------------------------------|--------------------------------|
| 1 Framework                  | 2 Specimen supports and anvils |
| 3 Specimen collection device | 4 Control panel                |
| 5 Pendulum                   | 6 Analogue display             |
| 7 Touch screen               | 8 Striker                      |
| 9 Protection shield          |                                |

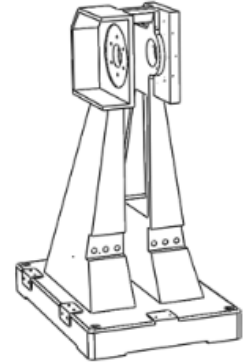


## FRAMEWORK

The framework is processed with one body casting. Front and rear columns are symmetric with single beam support axis, with high stiffness and precision.

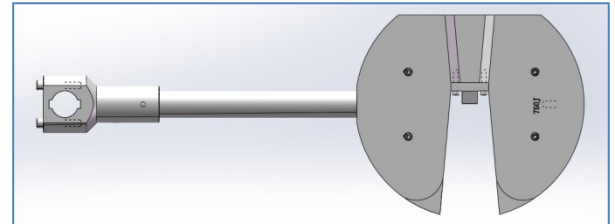
The framework is made from ductile cast iron with high strength and stiffness, and with good capability of vibration absorbing.

The seat mass is 822kg, 15 times than 750J pendulum mass (54.65), fully complying with standards that seat mass must be 12 times than pendulum mass.

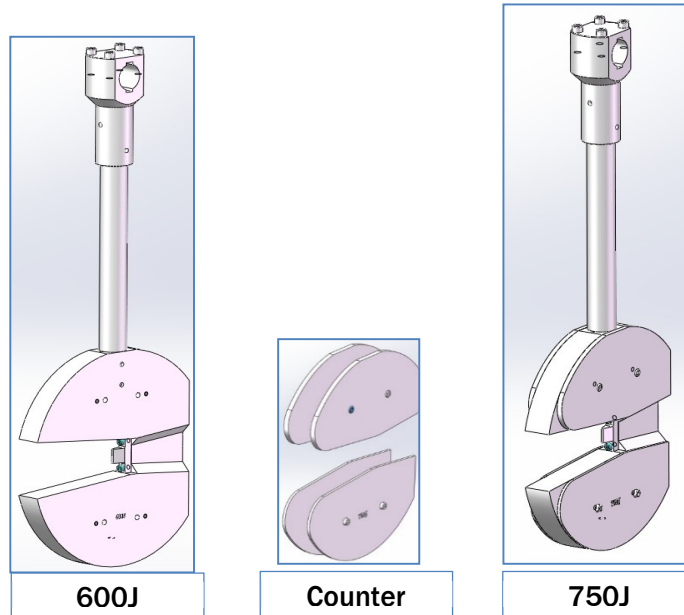


## PENDULUM

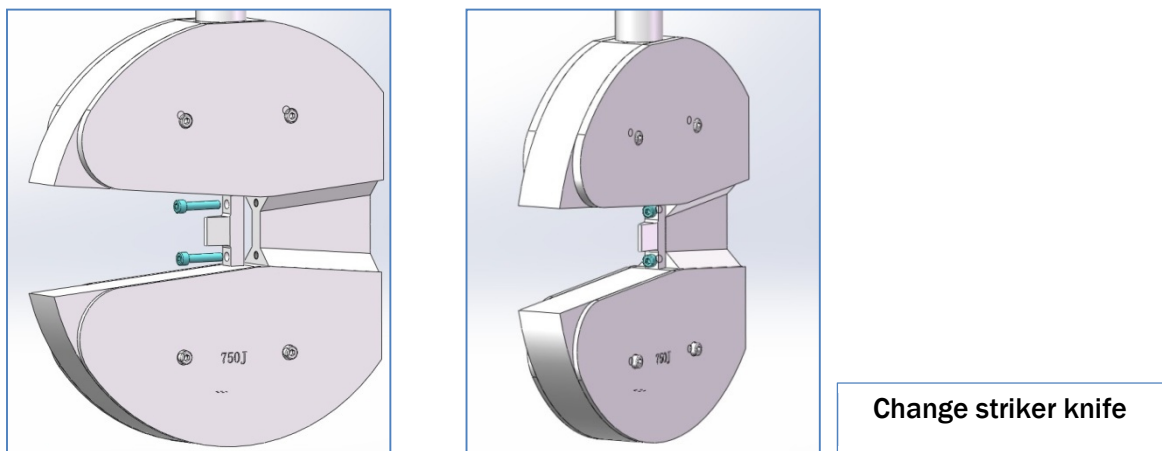
Pendulum is designed with 3D CAD software, greatly ensuring the striking center accuracy and pendulum moment precision. High strength pendulum rod highly reduces vibration after impact.



Striking head is combined design. 300J plus two counter weights becomes 450J, and 600J plus two counter weights becomes 750J. It is convenient to perform different energy tests with frequent changing pendulums.



Striking knife is tightened by wedge block, simple to change. Striking knife is available with R2 and R8, fully complying with ASTM, JIS, DIN, GB, ISO, EN and other standards.



Striking knife is made of anti-wearing high speed tool steel with hardening treatment, and hardness is larger than HRC60, with high strength, ductility and abrasion resistance.

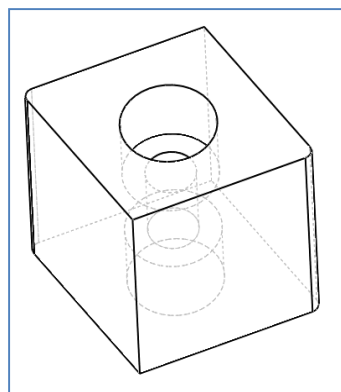
## SUPPORTS AND ANVILS

Anvil shape is rhombus and can be used in any direction, meaning the using life is 4 times than traditional anvil.

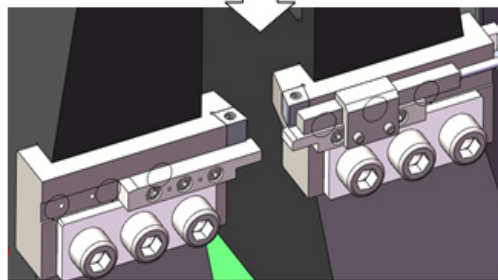
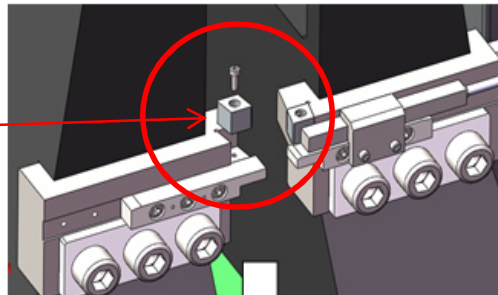
The anvil material is high speed tooling steel CW6Mo5Cr4V2 after hardening treatment, and the hardness is larger than HRC60, with high strength, ductility and abrasion resistance.

It is very simple to change anvils with inner hexagon spanner. The anvil is machined by special process with high precision and good interchangeability.

Anvil is exchangeable and can be used four times by changing mount directions, greatly improving the servicing life and saving cost.



Exchangeable anvil



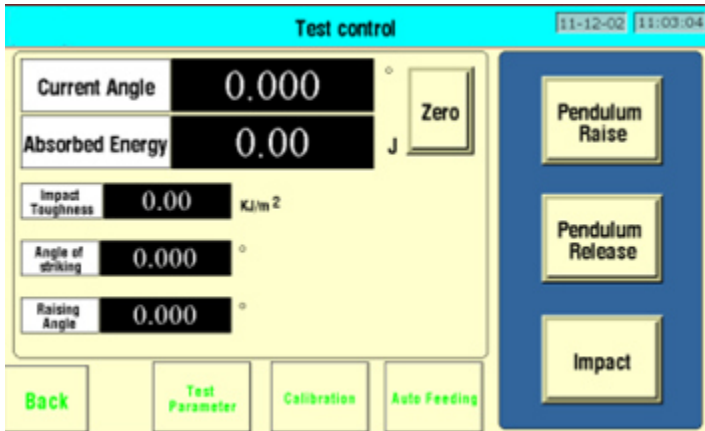


## ENERGY DISPLAY SYSTEM

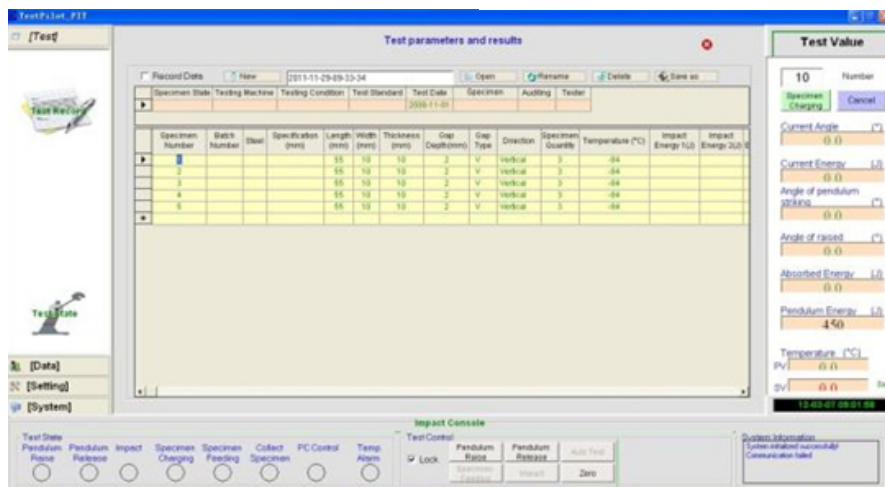
Three types of energy display are available:

- Analogue display: simple and direct to read impact energy
- Wide view touch screen
- Computer with test software

Analogue display



Wide view touch screen



Professional test software



## INSTRUMENTED IMPACT SYSTEM – IIS105

Instrumented impact system consists of striking knife with force transducer, data sampling card, signal conditioner and professional test software. Instantaneous force signal from transducer assembled on the striker is transferred to and enlarged by high speed signal conditioner. Enlarged signal is A/D converted by high speed data sampling card, then transferred to computer for storage and analysis. After calculating and analyzing original force vs. displacement curve, more characteristic parameters could be determined, furthermore specimen deformation and fracture property could be precisely judged.



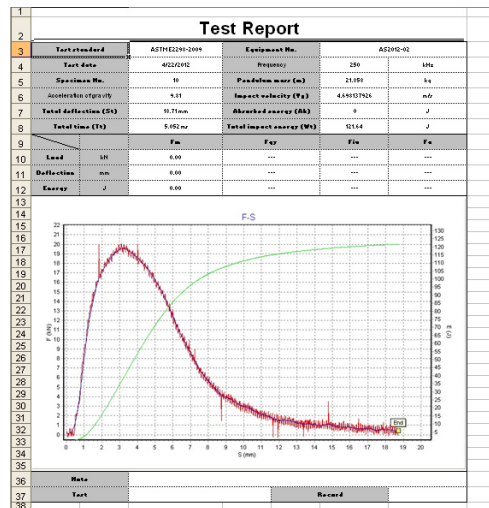
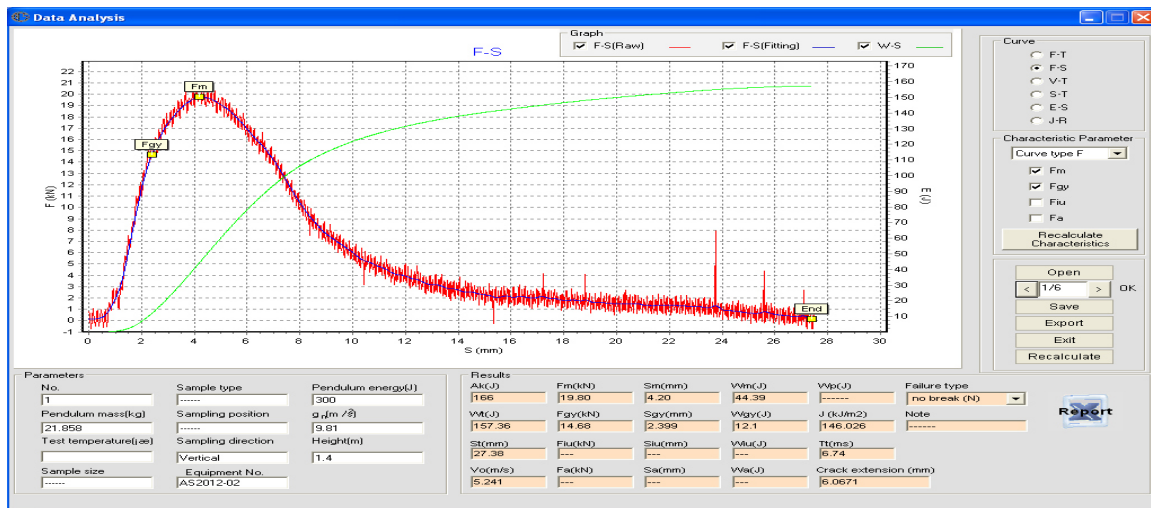
## SPECIFICATIONS

Model	RPIT452G RPIT752H
Force transducer	30kN, 50kN
A/D sampling resolution	16bits
Maximum sampling frequency	1.25MHz
Frequency band width	500kHz
Power supply	AC220V±10%, 50Hz, 100W



## INSTRUMENT DATA ANALYSIS SYSTEM - SOFTWARE

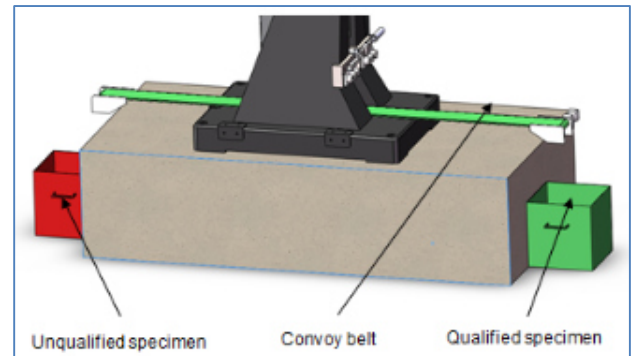
- Automatic curve fitting of force vs. displacements
- Automatically determine  $F_{gy}$ ,  $F_m$ ,  $F_{iu}$ ,  $F_a$ , and other characteristic parameter, further determine after calculation  $S_{gy}$ ,  $S_m$ ,  $S_{iu}$ ,  $S_a$ ,  $S_t$ ,  $W_m$ ,  $W_{iu}$ ,  $W_a$ ,  $W_t$  and others.
- Fully automatic data processing permits to get test results and report after each test immediately.
- Curve and raw data can be exported





## SPECIMEN COLLECTION SYSTEM

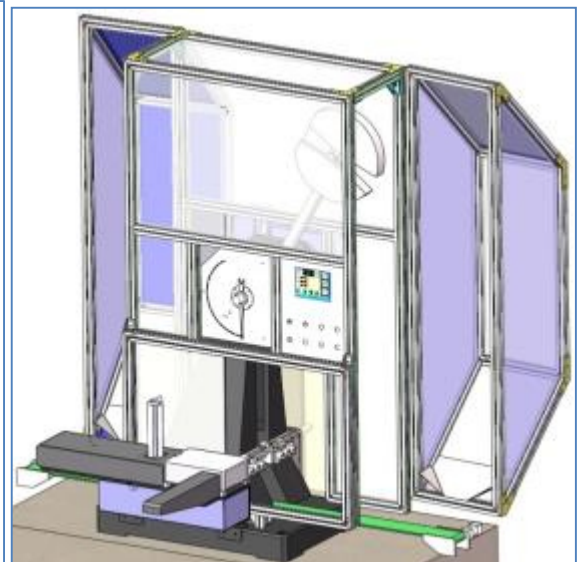
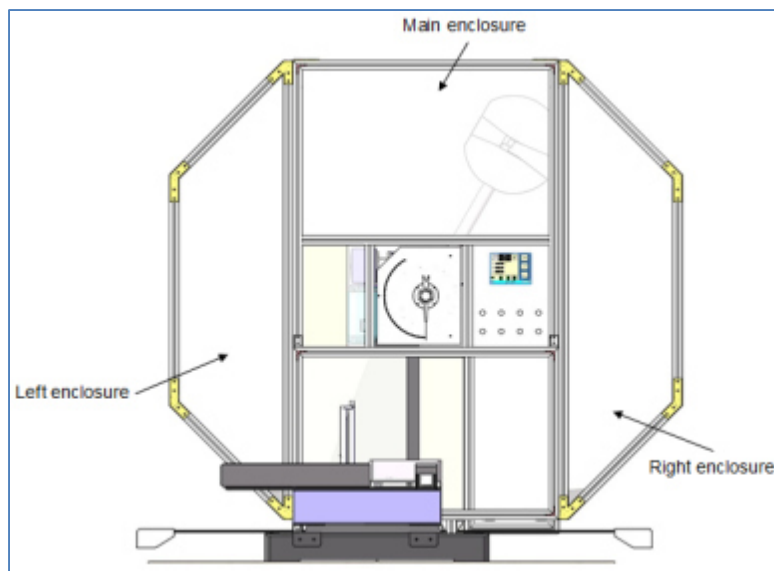
- Motorized device is used for collecting broken specimens after impact, instead of manual cleaning, which fully prevents striker from getting stuck



- Unique specimen filtering function: automatically judge and transport qualified and unqualified specimens to different collecting box

## SAFETY SYSTEM

This series of machine has fully closed protection shield to protect operator against specimen splitting during test, and to deny any access to the inside during test. Built-in door interlock further ensures operator safety. The protection shield is constructed with aluminum alloy profile for frame and fiber



glass for easy observation. Split-type door design is simple to repair and change pendulum.



## SPECIFICATION

Name		Description
Maximum impact energy		750J, 600J, 450J, 300J
Angle resolution		0.025°
Distance from the axis of support to the center of percussion		750mm
Velocity of striking		5.24m/s
Angle of striking		30°~150°, adjustable
Anvil	Span	40mm
	Radius of curvature of supports	1mm
	Angle of taper of supports	11°±1°
Instrumented striking knife	Radius of striking edge	2mm(R2) or 8mm(R8)
	Angle of striking tip	30°
	Thickness of striker	16mm
Dimension (with protection shield)		1960 x 680 x 2000 mm
Weight		800kg
Power supply		380V±10% 50Hz 5A



**STANDARD CONFIGURATIONS:**

Name	Description	Model		
		RPIT752H-2	RPIT752H-3	RPIT752H-4
Framework	Frame	√	√	√
	Pendulum lock/release system	√	√	√
	Driving system	√	√	√
	Angle measurement system	√	√	√
	SIMENS PLC control	√	√	√
	Analogue display	√	√	√
	Touch screen	√	√	√
	Protection shield	√	√	√
	Other auxiliary parts	√	√	√
Servo motor		√	√	√
Instrumented impact system (model: IIS105)	Data sampling card Data Conditioner Instrumented test software			√
Software			√	√
Accessories	Span adjusting device specimen center alignment device inside-hexagonal spanner foundation bolts wedge block	√	√	√



**OPTIONAL PENDULUMS**

Name	Description	Compatible Model
Charpy pendulum & specimen support (striking knife: R2/R8)	300J	RPIT752G-2, RPIT752G-3
	450J	
	600J	
	750J	
Please specify ISO striker or ASTM striker		

*Remark: 1) 450J pendulum is assembled by 300J pendulum with two counter weight.  
2) 750J pendulum is assembled by 600J pendulum with two counter weight.*

**OPTIONAL INSTRUMENTED PENDULUMS**

Name	Description	Compatible Model
Instrumented Charpy pendulum & specimen support (striking knife with 30kN force transducer: R2/R8)	300J	RPIT752G-4
	450J	
	600J	
	750J	
Please specify ISO striker or ASTM striker		

*Remark: 1) 450J pendulum is assembled by 300J pendulum with two counter weight.  
2) 750J pendulum is assembled by 600J pendulum with two counter weight.*

**OPTIONAL NOTCH BROACHER**

Name	MODEL	Specifications
Notch making machine	NSM201B	V2 and U5 notch Comply with ISO148 and ASTM E23



### OPTIONAL CONFIGURATIONS

Name	Model	Description	Accessories
Automatic cooling and feeding system	LTC601A-2	-60°C~ambient Cooling method: compressor	Specimen auto-feeding system Low temperature chamber Compressor Air pump
	LTC102B-2	-100°C~ambient Cooling method: liquid nitrogen	Specimen auto-feeding system Low temperature chamber Liquid nitrogen cylinder Air pump
	LTC182B-2	-180°C~ambient Cooling method: liquid nitrogen	
Manual cooling system	LTC601A-1	-60°C~ambient Cooling method: compressor	Low temperature chamber Compressor
	LTC801A-1	-80°C~ambient Cooling method: compressor	Low temperature chamber Compressor
	LTC102B-1	-100°C~ambient Cooling method: liquid nitrogen	Low temperature chamber Liquid nitrogen cylinder
	LTC182B-1	-180°C~ambient Cooling method: liquid nitrogen	