Plastic Impact Testing Machine

1, General introduction

Charpy Impact is a single point test that measures a materials resistance to impact from a swinging pendulum. Charpy impact is defined as the kinetic energy needed to initiate fracture and continue the fracture until the specimen is broken. The values obtained can be used for quality control or to differentiate general toughness.

Notched Izod Impact is a single point test that measures a materials resistance to impact from a swinging pendulum. Izod impact is defined as the kinetic energy needed to initiate fracture and continue the fracture until the specimen is broken. Izod specimens are notched to prevent deformation of the specimen upon impact. This test can be used as a quick and easy quality control check to determine if a material meets specific impact properties or to compare materials for general toughness.

United Test product both the IZOD and Charpy impact tester, in dial display, LCD screen display and computer control used determine the impact ductility of nonmetallic materials, such as Rigid thermoplastic and thermosetting plastic, thermosetting plastic and thermoplastic after fiber-reinforced. It is widely used in the industries of plastic products, plastic manufacture, petro chemical etc, University, scientific research institute and commodity inspection department.

Plastic V notch impact sample 80*10*4mm

Organic glass V notch impact sample 80*10*4mm

2, Reference

Charpy Test: The specimen is mounted horizontally and supported unclamped at both ends. The hammer is released and allowed to strike through the specimen. If breakage does not occur, a heavier hammer is used until failure occurs.

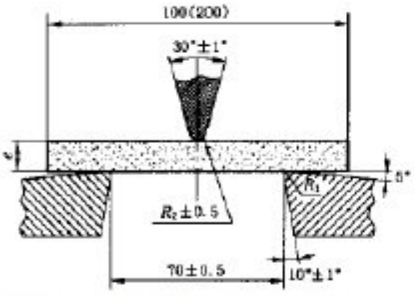
IZOD Test: The specimen is clamped into the pendulum impact test fixture with the notched side facing the striking edge of the pendulum. The pendulum is released and allowed to strike through the specimen. If breakage does not occur, a heavier hammer is used until failure occurs. Since many materials (especially thermoplastics) exhibit lower impact strength at reduced temperatures, it is sometimes appropriate to test materials at temperatures that simulate the intended end use environment.

ISO 179: "Plastics -- Determination of Charpy impact properties"
ASTM D6110: "Standard Test Method for Determining the Charpy Impact Resistance of Notched Specimens of Plastics"
ISO 180: "Plastics -- Determination of Izod impact strength"
ASTM D256: "Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics"
ISO 9854: "Thermoplastics pipes for the transport of fluids -- Determination of pendulum impact strength by the Charpy method"
ISO 8256: "Plastic Stretch Impact Intensity Determination" (method A)
ASTM D1822: "Plastic And Electric insulation Material Stretch Impact Performance test Method".

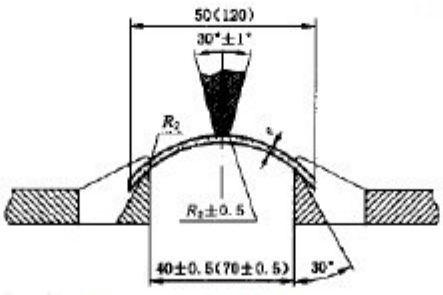
Charpy impact test Specimen size of ISO 179:
Specimens are 80 x 10mm by thickness. The specimens can be either notched or unnotched.

Izod impact test Specimen size of ISO 180:
The standard specimen for ISO is a Type 1A multipurpose specimen with the end tabs cut off. The resulting test sample measures 80 x 10 x 4 mm. The depth under the notch of the specimen is 8mm.

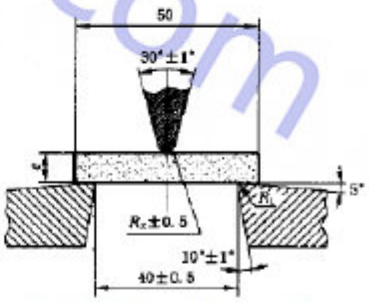
Striking edge & Vice for ISO 9854, pipe impact test.



Standard bar test piece



Convex test piece



Small bar test piece

Dial Charpy Impact Tester

Model: XJJ Series

Key Features

1, Dial display, Charpy test method;
2, This economical model is simple in structure, easy to operate.
3, Support vice, pendulum is nickel coating, good appearance and anti-corrosion.
4, Standard ISO 179, ASTM D6110, ISO 9854.

Main technical specification

Model	XJJ-5	XJJ-50
Impact energy	1J, 2J, 4J, 5J	7.5J, 15J, 25J, 50J
Impact speed	2.9m/s	3.8m/s
Pendulum center to specimen center distance	221mm	380mm
Pendulum initial angle	160°	160°
Supporting blade angle radius	R=1mm	
Supporting blade included angle	30°	
Impact blade angle radius	R=2mm	
Specimen span	40,60,70,95（mm）	
Display type	Dial analog display	
Specimen clamping type	Charpy	
Standard Accessories	Loadframe, pendulum(1J, 2J 4J, 5J), supporting vice jaws, specimen centering plate, spanner, manual etc.	Loadframe, pendulum(7.5J, 15J, 25J, 50J), moving supporting base, specimen centering plate, spanner, manual etc.

Dial IZOD Impact Tester

Model: XJU Series

Key Features

1, Dial display, Izod Test model;
2, This economical model is simple in structure, easy to operate.
3, Support vice, pendulum is nickel coating, good appearance and anti-corrosion.
4, Standard ISO 180, ASTM D256

Main technical specification

Model	XJU-5.5	XJU-22
Impact energy	1J, 2.75, 5.5J	5.5J, 11J, 22J
Impact speed	3.5m/s	3.5m/s
Pendulum center to impact blade distance	322mm	322mm
Distance from impact blade to upper surface	22mm	22mm
Blade angle radius	R=0.8mm	R=0.8mm
Pendulum initial angle	160°	160°
Display type	Dial analog display	
Specimen clamping type	IZOD	
Standard Accessories	Loadframe, pendulum(1J, 5.5J), pendulum weight (2.75J), vice adjusting plate, spanner, manual etc.	Loadframe, pendulum(5.5J, 11J, 22J), vice, impact standard plate, spanner, manual etc.

LCD Display Electronic Charpy Impact Tester

Model: XJJD Series

Key Features

1, LCD display, Charpy Test model;
2, Adopts rotate encoder grating side angle technology, high accuracy, high reliability, and big measuring range;
3, Support vice, pendulum is nickel coating, good appearance and anti-corrosion.
4, Standard ISO 179, ASTM D6110, ISO 9854.
5, Indicate impact energy, impact strength, initial angle, rising angle, energy loss etc.,
6, Automatic correcting the energy loss;
Auto-print and save the records.

Main technical specification

Model	XJJD-5	XJJD-50
Impact energy	1J, 2J, 4J, 5J	7.5J, 15J, 25J, 50J
Impact speed	2.9m/s	3.8m/s
Pendulum initial angle	160°	160°
Pendulum center to specimen center distance	221mm	380mm
Specimen span	40,60,70,95（mm）	
Supporting blade angle radius	R=1mm	
Supporting blade included angle	30°	
Impact blade angle radius	R=2mm	
Power	220V, 50HZ	
Display type	LCD display	
Specimen clamping type	Charpy	
Standard Accessories	Loadframe, pendulum(1J, 2J, 4J, 5J), supporting vice jaws, specimen centering plate, spanner, power cord, manual etc.	Loadframe, pendulum(7.5J, 15J, 25J, 50J), moving supporting base, specimen centering plate, spanner, power cord, manual etc.

LCD Display Electronic Izod Impact Tester

Model: XJUD Series

Key Features

1, LCD display, IZOD Test model;
2, Adopts rotate encoder grating side angle technology, high accuracy, high reliability, and big measuring range;
3, Support vice, pendulum is nickel coating, good appearance and anti-corrosion.
4, Standard ISO 180, ASTM D256.
5, Indicate impact energy, impact strength, initial angle, rising angle, energy loss etc.,
6, Automatic correcting the energy loss; Auto-print and save the records.
7, Full range XJUD-22F is available, energy range 1J, 2.75, 5.5J, 11J, 22J

Main technical specification

Model	XJUD-5.5	XJUD-22
Impact energy	1J, 2.75, 5.5J	5.5J, 11J, 22J
Impact speed	3.5m/s	3.5m/s
Pendulum initial angle	160°	160°
Free impact energy loss	Less than 0.05J	Less than 0.1J
Initial potential energy error	Less than±1.5%	
Pendulum center to impact blade distance	322mm	322mm
Distance from impact blade to upper surface	22mm	22mm
Blade angle radius	R=0.8mm	R=0.8mm
Power	220V, 50HZ	
Display type	LCD display	
Specimen clamping type	IZOD	
Standard Accessories	Loadframe, pendulum(1J, 5.5J), pendulum weight (2.75J), vice adjusting plate, spanner, power cord, manual etc.	Loadframe, pendulum(5.5J, 11J, 22J), vice, impact standard plate, spanner, power cord, manual etc.

LCD Display

Electronic Charpy & Izod Integrated Impact Tester

Model: XJJUD Series

Key Features

1, LCD display, Charpy & Izod Test on same one test frame;
2, Adopts rotate encoder grating side angle technology, high accuracy, high reliability, and big measuring range;
3, Support vice, pendulum is nickel coating, good appearance and anti-corrosion.
4, Standard ISO 179, ASTM D6110, ISO 9854.
Standard ISO 180, ASTM D256.
5, Indicate impact energy, impact strength, initial angle, rising angle, energy loss etc.,
6, Automatic correcting the energy loss; Auto-print and save the records.

Main technical specification

Model	XJJUD-5.5	XJJUD-50	XJJUD-50F
Charpy Impact Test			
Impact energy	1J, 2J, 4J, 5J	7.5J, 15J, 25J, 50J	1J, 2J, 4J, 5J, 7.5J, 15J, 25J, 50J
Impact speed	2.9m/s	3.8m/s	2.9m/s, 3.8m/s
Pendulum initial angle	150°	150°	150°
Specimen span	40, 60, 70, 95(mm)		
Pendulum force moment	Pd1=0.53590Nm; Pd2=1.07180 Nm; Pd4=2.14359 Nm; Pd5=2.67949Nm; Pd7.5=4.01924N.m; Pd15=8.03848N.m; Pd25=13.39746N.m; Pd50=26.79492N.m		
Supporting blade angle radius	R=1mm		
Supporting blade included angle	30°		
Impact blade angle radius	R=2mm		
Izod Impact Test			
Impact energy	1J, 2.72J, 5.5J	5.5J, 11J, 22J	1J, 2.72J, 5.5J ,11J, 22J
Impact speed	3.5m/s	3.5m/s	3.5m/s
Pendulum initial angle	150°	150°	150°
Distance from impact blade to upper surface	22mm		
Blade angle radius	0.8mm		
Pendulum force moment	Pd1=0.53590N.m; Pd2.75=1.41775N.m; Pd5.5=2.8355N.m; Pd11=5.671N.m; Pd22=11.342N.m		
Power	220V, 50HZ		
Display type	LCD display		
Standard Accessories (For Charpy)	pendulum(1J,2J), pendulum weight (4J,5J), vice jaws, specimen centering plate	pendulum(7.5J,25J), Weight (15J, 50J) vice jaws, specimen centering plate	pendulum(1J,2J,7.5J,25J), Weight(4J,5J,15J,50J) vice, specimen centering plate
Standard Accessories (For Izod)	pendulum(1J, 2.75J), pendulum weight (5.5J), vice adjusting plate, spanner, power cord, manual etc.	pendulum(11J, 22J), vice adjusting plate, spanner, power cord, manual etc.	pendulum(1J,2.75J,11J,22J), weight (5.5J), vice adjusting plate, spanner, power cord, manual etc.

Computer Controlled Electronic Impact Tester

Model: XJJ-P/XJU-P/XJJU-P Series

Key Features

1, Computer control, can store 5000 history data, adopt Win7 system, can input different kind test parameter, automatic calculate impact energy, automatic generate and print the test report;

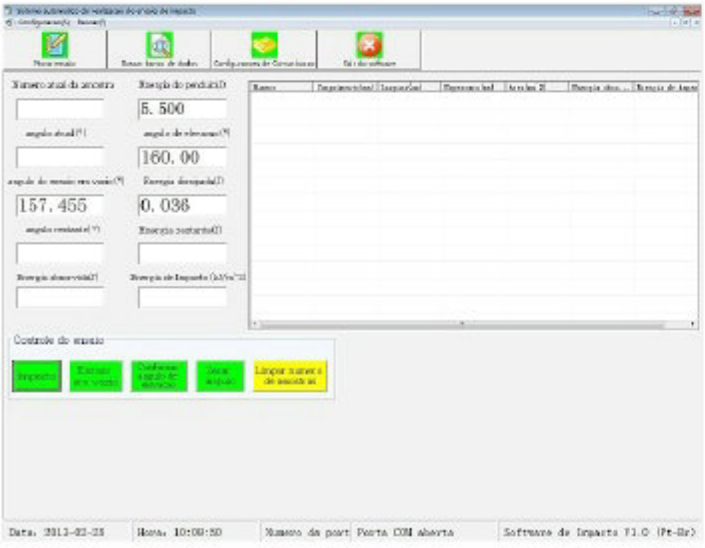
2, Adopts rotate encoder grating side angle technology, high accuracy, high reliability, and big measuring range;

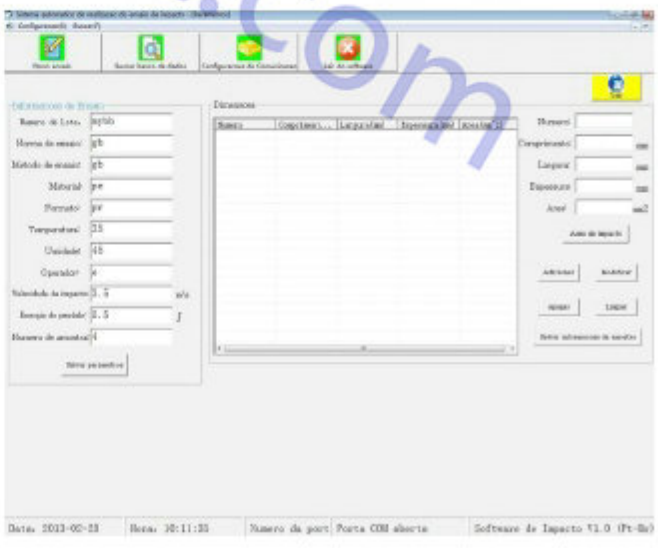
3, Support vice, pendulum is nickel coating, good appearance and anti-corrosion.

4, Standard ISO 179, ASTM D6110, ISO 9854.
Standard ISO 180, ASTM D256.

5, Indicate impact energy, impact strength, initial angle, rising angle, energy loss etc.,

6, Automatic correcting the energy loss; Auto-print and save the records.





Plastic Tensile Impact Testing Machine

Model: LCT Series

Introduction

LCT plastic tensile impact testing machine is used to execute tensile-impact test of plastics or insulaton materials under defined condition, as tensile tests at relatively high strain rates; measure the tensile-impact strength and permanent break elongation rate, especially for materials too flexible or too thin to be tested use Charpy or Izod impact tester.

This testing machine is widely used in the scientific research unit, the universities, colleges and institutes, the production enterprise and the examination department.

Conform with ISO8256-1990 "Plastic Stretch Impact Intensity Determination" and American standard ASTM D1822 "Plastic And Electric insulation Material Stretch Impact Performance test Method".

Main technical specification

Model	LCT-50	LCT-50D
Impact energy	7.5J, 15J, 25J, 50J	7.5J, 15J, 25J, 50J
Impact speed	3.44m/s	3.44m/s
Pendulum initial angle	160°	160°
Pendulum center to sample center distance	311 .06mm	
Distance between movable and fixed clip block	25mm, 30mm	
Movable block weight	60g, 120g	
Power	220V, 50HZ	220V, 50HZ
Display type	Dial scale	LCD display