

Instrumented Charpy Impact Testing Machine

Model: JBW-H series



1, General introduction

JBW-H series instrumented impact tester is adopts advanced foreign technology and cooperate with China National Engineering & Physical research institute to developed a new products. Through measuring the impact value, collect and analysis the impact process data, figure energy curve, then supply details data for engineers to study and analysis material character.

This tester is mainly consist of automatically high and low temperature device (optional), auto-feeding system, and impact tester load frame, can be used test, analysis the accuracy material anti-impact performance. Tester is controlled by computer, rising pendulum, hang pendulum, impact, stop all controlled by PC.

Adopt data collection system, change the voltage signal to digital signal, add data storage and PC, to transfer collected data to impact load - time, impact load-displacement, displacement- time, energy-time etc. curve. Vivid illustrate the material under loading and deformation process to break.

2, Reference

ASTM E23 "Standard Test Methods for Notched Bar Impact Testing of Metallic Materials"

ISO 14556 "Steel -- Charpy V-notch pendulum impact test -- Instrumented test method"

GB/T19748 etc.,

3, Key Features

Load frame

- 1), Comply with GB/T19748-2005, ISO 14556 : 2000(E), ASTM E23 etc.;
- 2), Loadframe base and leading column integrated design, overall process, with high stiffness, and improve test stability;
- 3), Impact axis adopt Charpy type, reasonable the radial direction load, maximum decrease energy loss caused by the bearing friction;
- 4), Adopt two level standard deceleration motor to rise the pendulum, rising and hang pendulum adopt hydraulic buffer to smooth the action.
- 5), Pendulum is round shape swing type, ensure the strike center accuracy, and precision pendulum moment;
- 6), Can achieve parameter of Impact velocity, impact time, impact energy, absorb energy, displacement, crack forming energy, crack extension energy, yield load, yield time, peak load, time of peak load, displacement of peak load, energy of peak load, unstable crack extension start load, unstable crack extension stop load, unstable crack extension start energy etc.
- 7), Working principle: through the angle displacement sensor to measure pendulum pre-rising angle and rising angle after break specimen, then obtain tester impact energy and remain energy after specimen break, and supply each sampling point velocity parameter; pendulum impact break the specimen at one time, the load sensor will measure the load changement during this period, and figure the load-time curve. Through software analysis load-displacement and other data, to help customer study the specimen deformation and breakage character;
- 8), Safety pin; and all close safety cover.

Control system, Software

- 1), Software main interface include 5 parts: Headline, Function key, test information, figure indication, key data zone;
- 2), Function key area include: Test, rising pendulum, release pendulum, calibration, Zero, rising angle, sensor choosing, data storage, test report etc.;
- 3), Test information area include: date, test condition, specimen number, standard, blade radius etc.;
- 4), Key data and figure indication area is at middle of the interface, choose certain curve name, can show relative wave figure, and key test data. Underside is operation key, like readout, coordinate indication, zoom in, zoom out, etc., Key data include impact velocity, impact time, impact energy, absorb energy, displacement, crack generation energy and so on.



Before Test

Variable

Batch	000	Material	Iron	Mark	01	Temp	25	Style	Good	Temp	100	Length	100	Width	10	Height	9
Number	000-0	Temperature	25	Height	0	Style	Good	Temp	100	Length	100	Width	10	Height	9		
Thickness	0	Style	0	Base 1	0	Temp	25	Style	Good	Temp	100	Length	100	Width	10	Height	9
Energy	0	Temp	25	Base 2	0	Temp	25	Style	Good	Temp	100	Length	100	Width	10	Height	9
Standard	GB	Temp	25	Base 3	0	Temp	25	Style	Good	Temp	100	Length	100	Width	10	Height	9
TestDate	2007/11/20	Temp	25	Base 4	0	Temp	25	Style	Good	Temp	100	Length	100	Width	10	Height	9
Operator	Yuz	Temp	25	Base 5	0	Temp	25	Style	Good	Temp	100	Length	100	Width	10	Height	9
Comment	Good	Temp	25	Base 6	0	Temp	25	Style	Good	Temp	100	Length	100	Width	10	Height	9

Batch	Number	Thickness	Energy	Standard	Operator	Material	Temp	Comment	Style	Temp	Length	Width	Height
1	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
2	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
3	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
4	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
5	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
6	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
7	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
8	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
9	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10
10	000	0-00-0	0	GB	Yuz	Iron	25	Good	0	2	100	100	10

Main technical specification

Model	JBW-H
Impact energy	150J/300J/450J/600J/750J
Distance between pendulum center to impact point	750mm
Impact velocity	5.24m/s
Pendulum preparing angle	150°
Span of specimen seat	40+0.2mm
Round angle radius of Grips	R1-1.5mm
Round angle radius of striking edge	R2-2.5mm, R8±0.08mm
Impact blade thickness	16mm
Angle of impact knife	30°
Specimen size	10mm*10mm*55mm
Load sensor accuracy	≤±1 %FS
Angle displacement resolution	0.1°
Lower temperature mode	Liquid nitrogen
Higher temperature mode	Heating wire
Sample box capacity	6 pcs, uniform 4 pcs
High and low temperature	Available and Optional
Sample Feeding system	can store 20 pcs sample at one time
Power supply	3 phases 4 lines, 50Hz, 380V

Main accessories

High Stiffness Frame	1 set
Impact pendulum	1 set
Small pendulum	1 set
R2, R8 impact blade edge (with 50KN force transducer)	1 set
Electric operation panel	1 set
Automatic hitch pendulum device (on the loadframe)	1 set
Safety pin (on the loadframe)	1 set
Supporting seat span adjusting device (L=40)	1 set
Specimen center device (L=40 V.U type)	1 set
Safety cover	1 set
Device to dismantle pendulum	1 set
Terra anchor bolts (M16×300)	1 set
Documents (Manual, packing list, certificate)	