



CHARPY IMPACT TESTER TT-PIT300

Charpy Impact Tester TT-PIT300 delivers precise impact resistance testing for metals, featuring advanced controls, modular design, international standard compliance, and enhanced safety with a protective enclosure.

APPLICATIONS

This equipment measures the resistance of metal materials to impact under dynamic loads, evaluating the material's properties in such conditions. It calculates the sample's absorbed energy by comparing the pendulum's potential energy before impact with its remaining energy after impact, as shown on the dial. The device supports a maximum impact energy of 300J and includes an additional 150J pendulum. The cross-section of the test sample is (10 × 10) mm.

The system features semi-automatic controls, making it user-friendly and efficient. After breaking the sample, the remaining energy is used to automatically reset the pendulum, streamlining successive impact tests. This capability enhances its performance in continuous testing.

It is widely applied in fields like measurement and quality control, technical supervision, metallurgy, steel production, machinery manufacturing, pressure vessel inspection, automotive production, universities, and research institutions.

Applicable standards

1. **ASTM E23-2018:** Standard Test Methods for Notched Bar Impact Testing of Metallic Materials (compatible with the American standard pendulum)
2. **ISO 148-1:2016:** Metallic Materials—Charpy Pendulum Impact Test—Part 1: Test Method
3. **ISO 148-2:2016:** Metallic Materials—Charpy Pendulum Impact Test—Part 2: Verification of Test Machines
4. **ISO 148-3:2016:** Metallic Materials—Charpy Pendulum Impact Test—Part 3: Preparation and Characterization of Charpy V-Notch Test Pieces for Indirect Verification of Pendulum Impact Machines

5. **ISO R83**: Steel - Charpy Impact Test (U-Notch)
6. **JJG 145-2007**: Pendulum Impact Testing Machines

FEATURES

- The machine's structure and base are constructed as a single integral casting, ensuring excellent stability and operational accuracy.
- It uses popular pendulum structure, designed and analyzed through 3D modeling to guarantee precision in the strike center and pendulum torque.
- Equipped with a pendulum lock hammer mechanism and a safety protection device, it ensures safe and stable operation.
- The pendulum shaft features a double-support structure, simplifying installation and enhancing durability.
- High-precision bearings minimize friction, keeping the empty pendulum impact absorption work below 0.3%.
- A spring buffer design in the hanging pendulum device prevents impact damage, maintaining a consistent pendulum angle over extended use.
- Modular structural design reduces processing and assembly steps, significantly improving the machine's precision.
- The impact blade, made of alloy steel with a hardness of HRC60, is secured with high-strength screws, allowing for easy replacement.
- Features Panasonic PLC controller for fully automatic operation, ensuring user-friendly functionality.
- The PLC includes a built-in national standard energy loss correction program, enhancing test result accuracy.
- The upper machine integrates a commercial-brand computer, communicates with the lower machine via RS232, and uses self-developed control software for data storage and automatic processing.
- Test data can be saved in Excel format for easy output and printing.
- A protective cage prevents broken samples from flying out, ensuring operator safety.
- The equipment's exterior is coated with high-grade automotive paint, combining aesthetics with durability.

TECHNICAL SPECIFICATIONS

Charpy Impact Tester TT-PIT300			
Machine model		TT-PIT300	
Impact energy		300J	150J
Dial scale range and indexing value	Energy range	0-300J	0-150J
	Indexing value for each cell	2J	1J
Pendulum torque		M=160.7695N·m	M=80.3848N·m
Pendulum angle		150°	
Pendulum shaft center of rotation to the impact point distance (sample center)		750mm	
Impact speed		5.2m/s	
Specimen support		40mm	
Round corner of support jaw		R (1.0~1.5)mm (1mm is special ordered.)	
Blade curvature radius		R (2.0~2.5)mm (8mm is special ordered.)	
Specimen holder support surface angle		11°	
Impact blade angle		30°	
Impact blade thickness		16mm	
Measuring angle range		0-360°	
Angle resolution		≤0.06°	
Specimen dimension		10×10×55 mm (Thickness 7.5mm, 5mm is special ordered.)	
Machine weight		420kg	
Voltage		Three phase four-wire, 380V 50Hz 400W	

Dimensions

Charpy Impact Tester TT-PIT300

Model	Dimension: W×C×H	Base outline dimension: A×B
TT-PIT300	2050×690×2015mm	500×800mm

Standard Configurations

- 1. **Main Unit:** 300J, one set
- 2. **Pendulum Hammer:** 150J and 300J, one piece each
- 3. **PC:** One set
- 4. **A4 Color Inkjet Printer:** One set
- 5. **Special Data Processing and Control Software:** One set
- 6. **Alignment Device:** One piece
- 7. **Specimen Centering Device:** One piece
- 8. **Remover:** For changing the pendulum, one piece
- 9. **Anchor Bolts:** for fix machine base, four pieces
- 10. **Fully Enclosed Protective Cage:** One set



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