



CHARPY IMPACT TESTER TT-PIT450

Charpy Impact Tester TT-PIT450 is designed for testing the impact resistance of materials, featuring high precision, automated control, and a 450J pendulum for accurate Charpy impact testing.

APPLICATIONS

This machine is designed to test the impact resistance of metal materials under dynamic load. It can perform a high volume of metal impact tests continuously and features fully automated control. The control system is powered by a programmable controller (PLC), and the entire testing process, including the pendulum operation, is controlled via computer software. It displays data such as impact absorption, impact toughness, and pendulum hammer rotation angle, and can generate test reports. The operation is user-friendly, safe, and efficient. The machine includes a protective net cover for safe operation. This device is primarily used in measurement and quality control, technical supervision, metallurgy and steel industries, machinery manufacturing, pressure vessel production, automobile manufacturing, universities, research institutes, and other relevant sectors. It is also an essential tool for scientific research institutions conducting new material studies.

Applicable standards

1. **ASTM E23-2018:** Standard Test Methods for Notched Bar Impact Testing of Metallic Materials (can meet the standard when equipped with an 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)

FEATURES

- The main frame and base of this machine are designed and cast as a single unit, providing high stability and excellent rigidity.
- The circular pendulum design effectively minimizes the impact of wind resistance on test results.
- The pendulum device uses a hanging design, reducing noise during operation and extending the equipment's service life.
- The transmission system features a standard two-stage reducer, offering a simple structure, easy maintenance, and a long service life.
- The machine includes three methods for displaying test results, ensuring the validity of results despite human error.
- The machine is equipped with an automatic sample recovery system, significantly enhancing work efficiency.
- The machine is fitted with a fully enclosed protective net, and features an advanced interlocking mechanism to ensure maximum safety for test personnel.
- This machine uses a Panasonic PLC controller, high-precision rotary encoder, and other data acquisition and processing hardware, along with self-developed control software, ensuring the accuracy of test results.

TECHNICAL SPECIFICATIONS

Charpy Impact Tester TT-PIT450				
Machine model		TT-PIT450		
Impact energy		150J	300J	450J
Dial scale range and indexing value	Energy range	0-150J	0-300J	0-450J
	Indexing value for each cell	1J	2J	3J
Pendulum torque		M=80.3848N·m	M=160.7695N·m	M=241.1543N·m
Pendulum angle		150°		

Pendulum shaft center of rotation to the impact point distance (sample center)	750mm
Impact speed	5.24m/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°±1°
Impact blade angle	30°±1°
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	900kg
Voltage	Three phase four-wire, 380V 50Hz 1.5KW

Dimensions

Charpy Impact Tester TT-PIT450

Model	Machine outline dimension: W×C×H	Base outline dimension: A×B
TT-PIT450	2100×835×2200mm	650×960mm

Standard Configurations

1. Main Unit – 1 set
2. Main Unit equipped with dial – 1 set
3. Control cabinet – 1 set
4. Charpy pendulum hammer (450J) – 1 piece
5. Charpy test fixture (including jaw and anvil) – 1 set
6. Specimen recovery device – 1 set
7. PC – 1 set
8. A4 color inkjet printer – 1 set
9. SmartTest special test software (with CD) – 1 set
10. Alignment device – 1 piece
11. Specimen centering device – 1 piece
12. Pliers-type centering device – 1 piece
13. Hexagon wrench (machine equipped specific tool) – 1 piece
14. Anchor bolts (for fixing machine base) – 4 pieces



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