# Physical Test Solutions

Innovative Solutions in Material Test Equipment

# High Capacity Impact Testers



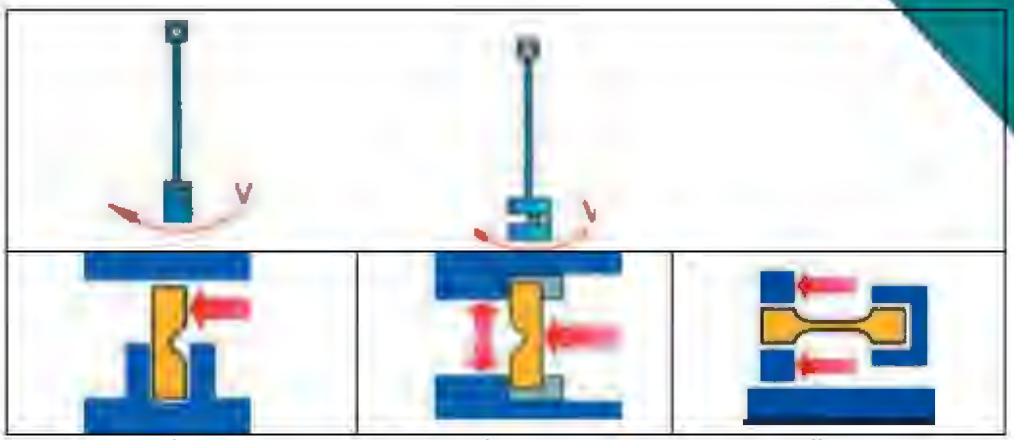




# IT Series Impact Testers

The Physical Test Solutions IT Series of impact testers offers *turn – key solution* packages. No need to decipher what hammers, tools, and other "recommended" accessories have to be ordered, **PTS** has it all included! Furthermore, all **PTS** impact testers offer automatic release and return mechanism, as well and a brake mechanism. All **PTS** impact testers are manufactured in an ISO 9001 certified facility

There are three types of pendulum impact tests; Izod, Charpy and Tensile Impact. The first two are the most common. Typically, Izod tests are most used in low energy applications for plastics and non-metallic materials, whereas Charpy tests are usually seen in high energy tests in metallic materials.



Izod Charpy Tensile Impact

The IT Series of high capacity impact testers used to determine the impact characteristics of metals has two main devises;, the striking harmer and tooling for Charpy or Izod tests. The impact energy can be seen on a dial, or on a digital display or on a computer. High capacity impact testers are available in capacities of 300 J, 500J and 800J. All IT Series high capacity impact testers conform to ASTM E23, ISO148-1983 and GB/T3808-1995

## ImpactStar Software

The ImpactStar Software operates in a windows environment and combines a user friendly working operation with powerful data acquisition and control capabilities.



The ImpactStar Software has the following features:

- Full digital control
- Individual or Batch Testing Capabilities
- Test Curve Analysis
- Convenient and Practical Parameter Settings
- Multilevel Security Management
- Versatile Operating Interface
- Automatic Program Control
- Versatile Test Report Generation
- Practical Database Management

# ITA Series Impact Testers

The ITA Series of impact testers is an analog tester that uses a dial gauge to read the impact energy. The analog method is the oldest form of measurement, and is also the most cost efficient method. The ITA is available in capacities of 300J, 500J and 800J.



### Standard Accessories for 300J Model

- ✓ Large Pendulum (300J)
- ✓ Small Pendulum (150J)
- ✓ Span specimen plate (L=40mm)
- ✓ Specimen centering plate (L=40mm)(U, V)
- ✓ Detaching device (S=30mm)
- ✓ Simple-head spanner
- ✓ Inner-hexagon spanner (S=12mm)
- ✓ Anchor bolts M16x300, 4 pieces
- ✓ Grips (including support) R=1mm 1 pair

## ITD Series Impact Testers

The ITD Series of impact testers feature a digital readout of test results with an LCD remote display. In this model, the pendulum is raised and released automatically.



### Standard Accessories for ITD-500J Model

- ✓ LCD display
- ✓ Large hammer: 500 J
- ✓ Small hammer: 250 J
- ✓ Span specimen plate (L=40mm)
- ✓ Specimen centering plate (L=40mm)(U, V)
- ✓ Detacher device (S=30mm)
- ✓ Simple-head spanner
- ✓ Inner-hexagon spanner (S=12mm)
- ✓ Anchor bolts M16x300 (4 pieces)
- ✓ Grips (including support) R=1mm (1 pair)

# ITC Series Impact Testers



ITC-500 shown with optional safety cover.

The ITC Series of impact testers' features computer controlled testing and includes the Impactstar Software. The main software features are described in page 4. The system has a digital interface card, an optical-electronic pick-up to measure the release angle. The pendulum is raised and released automatically.

**Standard Accessories for ITC-800 Model**

- ✓ PC Computer
- ✓ ImpactSoft software
- ✓ Large hammer: 800 J
- ✓ Small hammer: 500 J
- ✓ Span specimen plate (L=40mm)
- ✓ Specimen centering plate (L=40mm)(U, V)
- ✓ Detacher device (S=30mm)
- ✓ Simple-head spanner
- ✓ Inner-hexagon spanner (S=12mm)
- ✓ Anchor bolts M16x300 (4 pieces)
- ✓ Grips (including support) R=1mm (1 pair)

| Specifications | ITA-ITD-ITC-300 | ITA-ITD-ITC-500 | ITA-TD-ITC-800 |
|---|---|---|---|
| Impact energy (J) | 150, 300 | 250, 500 | 500, 800 |
| Foot Pound | 110, 220 | 184, 368 | 368, 590 |
| Kilogram-force-meter | 15, 30 | 25, 50 | 50, 80 |
| Impact velocity (m/s) | 5.2 | 5.4 | 5.9 |
| Raised angle | 150º | | |
| Standard span (mm) | 40 | | |
| Round angle of jaws (mm) | R1-1.5 | | |
| Round angle of striking edge (mm) | R2-2.5 | | |
| Size of specimen (mm) | 10 x 10 x 55 | | |
| Power supply | 380V , 3 ph, 50Hz, / 220V, 3 ph., 60 HZ, | | |
| Dimensions (mm) | 2124 x 600 x 1340 | 2144 x 736 x 1390 | 2450 x 1200 x 2455 |
| Net Weight (Kg) | 450 | 650 | 2300 |
| Display | ITA – Analog, ITD- LCD Monitor, ITC- Computer | | |

# Impact Accessories

## L71-UV Notching Machine for Charpy Impact Specimens



This machine is designed to notch specimens used in the impact testing tasks. The L71-UV may cut notch which according to the national standard GB/T229-1994 “Charpy notch Impact Test Method for metal material” on the specimen for only one time. At the same time, it has advantages of high precision, long life, low noise and attractive appearance.

**Specifications and Standard Accessories:**

- V type notch according to ASTM E23 and ISO148
- U type 2 mm, 3 mm notch according to DIN50115, and 5 mm according to ISO83
- Size of Specimen: 10 mm x 10 mm x 55 mm
- Cutting knife travel: 330 mm
- Cutting speed: 2.6m/min

Dimensions: 460 mm x 610 mm x 1400 mm
Power supply: 240V/60Hz.
Weight: 400kg

## Cryostatic Chamber for Impact Specimens

The chamber is designed to prepare Charpy notched Impact Test specimens for low temperature tests. The unit uses compressor cooling technology made up of two sections (Low temperature grade and high temperature grade). It utilizes the heat balance principle and cycle stirring method to achieve constant temperature cooling of impact specimens for reliable performance. When the chamber is connected to the impact tester to perform low temperature impact tests, the specimen can be delivered automatically.



**Main Specifications**

- ✓ Temperature control range: +30- -35ºC
- ✓ Constant temperature accuracy: =±0.5ºC
- ✓ Temperature dropping speed: +30ºC - 0ºC, +30ºC - -20ºC, -20ºC - -35ºC
- ✓ Dimension: 800x510x750 mm
- ✓ Effective working space: 120x120x80 mm
- ✓ Chamber holds more than 60 specimens
- ✓ Specimen dimension: 10x10x55 mm
- ✓ Digital timer; 1 sec -100 minutes
- ✓ Cooling media: Alcohol or other
- ✓ Power supply: 110V/220-240V, 50/60 Hz

# DT Series Drop Weight Impact Testers



The DT Series drop weight impact testers are suitable for drop weight tear test to various kinds of ferrites, especially to pipeline steel. The unit is equipped with different weights and anvils and can perform other types of impact tests according to customers' special request.

## Features

- Impact energy is adjusted by lifting height and the number of weights.
- The buffer is equipped to absorb the residual energy after breaking the specimen to protect the weight and anvil from destroying.
- The unit is equipped with safety features, such as safety net, safe pin for maintenance and hanger locking.
- The tester also has a specimen-carrying system, anti-falling devise for the specimen, centering set-up to guarantee quick, accurate and reliable tests.



## Standard Accessories

1. Impact hammer
2. Specimen-carrying devise
3. Anti-falling of mechanism for the specimen
4. Centering devise
5. Safety net

## Optional Accessories

According to API 5L, the specimen for drop weight impact test should have a V-groove, but this V-groove can not made by cutting, only by compression.
Compression machine for compressing V-groove

## Specifications

| Model | DT-20000 | DT-30000 | DT-40000 | DT-50000 |
|---|---|---|---|---|
| Maximum energy | 20000J | 30000 J | 40000 J | 50000 J |
| Maximum lifting height | 2800 mm | 2800mm | 2000mm | 2000 mm |
| Maximum impact velocity | 7.4 m/s | 7.4 m/s | 7.6 m/s | 7.6 m/s |
| Curvature radius of weight | R25 mm | R25 mm | R25 mm | R25 mm |
| Curvature radius of anvil | R25 mm | R25 mm | R25 mm | R25 mm |
| Hardness of weight and anvil | ≥HRC60-65 | ≥HRC60-65 | ≥HRC-60-65 | ≥ HRC60-65 |
| Distance between supports | 254 mm | 254 mm | 254 mm | 254 mm |
| Specimen Centering deviation | ≤±1 mm | ≤±1 mm | ≤ ± 1 mm | ≤ ± 1 mm |
| Indicating deviation of lifting height | ≤±1 mm | ≤±1 mm | ≤ ± 1 mm | ≤ ± 1 mm |
| Dimensions (mm) | 1200 x 1400 x 5500 | 1200 x 1400 x 5500 | 1300 x 1500 x 6800 mm | 1300 x 1500 x 6800 |

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