

## Background

Impact strength is a crucial parameter for assessing the quality of plastic films. It plays a significant role in determining a film's ability to withstand external forces and impacts, which can directly affect its cost and performance, especially during transportation and handling.

The Falling Dart Impact Test is a traditional and widely accepted method for measuring the impact strength of plastic films. This test helps determine the energy required to cause a plastic film to fail under controlled conditions where a free-falling dart strikes the material's surface. The result of this test provides valuable information about the material's ability to resist impact and can help manufacturers and quality control teams make informed decisions about material selection, product design, and packaging to ensure the durability and integrity of plastic films in various applications.

## Application

FDT-01 Falling Dart Impact Tester is used to measure the resistance performance of plastic films, sheets, and composite films, foils, paper, with less than 1mm thickness. This test indicates material ability to resist external force.

The FDT-01 Falling Dart Impact Tester is a specialized testing device designed for measuring the resistance performance of various materials, such as plastic films, sheets, composite films, foils, and paper, provided they are less than 1mm thick. This test is conducted to assess the material's ability to withstand external forces.

## Standards

ASTM D1709, ISO 7765-1, JIS K7124-1, GB/T 9639.1

## Technical Features

FDT-01 Falling Dart Impact Tester is a PLC controlled unit (industrial level stable) and HMI touch screen operated. Every part of the dart assembly and releasing mechanism are made strictly to standard.

With the embedded test program, user just needs to perform test and increase or reduce the weights according to the set parameters. Then after enough number of Fail/Non-Fail tests, the system automatically gives impact result, which is without being manually calculated again.

1. PLC Control and Touch Screen Operation offer stability, ease of use and efficient operation.
2. Two Test Methods (A and B) (Method B is optional)
3. Both Test Button and Foot Switch Are Equipped for safe and easy operation
4. Observation Light helps check sample status during clamping
5. Display of Test Results in Grams and Joules
6. Electromagnetic Suspension and Automatic Falling
7. Sample Pneumatic Clamping
8. Dot Matrix Micro-Printer Embedded for data output
9. Professional Software is Provided as an Optional part

## Main Parameters

Test Method	Method A or Method B (optional)
Test Range	Method A: 50~2000g Method B: 300~2000g
Dart Diameter	Method A: 38±1mm Method B: 50±1mm
Impact Height	660mm/1500mm
Accuracy	0.1g (0.1J)
Clamp	Pneumatic Clamp
Gas Supply	0.6 MPa Φ8 mm PU Tubing
Specimen Size	> 150 mm x 150 mm
Power Supply	AC 110~220V 50Hz
Dimension	Method A: 500*450*1200 mm (LWH) Method B: 500*450*2200 mm (LWH)



*The Company reserves the right to update, modify, or amend this Catalog without prior notice.*

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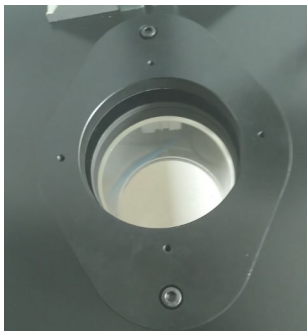


**CELL INSTRUMENTS**

| Material Testing Solutions

## FDT-01 Falling Dart Impact Tester

### Details of Main Part



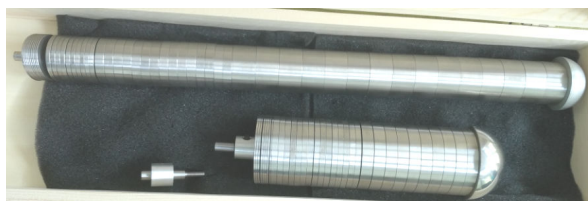
**Sample Clamp**



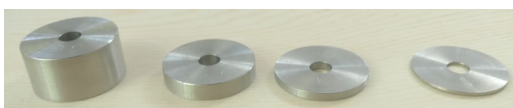
**Dart Release**



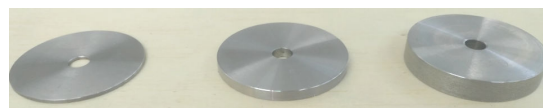
**Display & Printer**



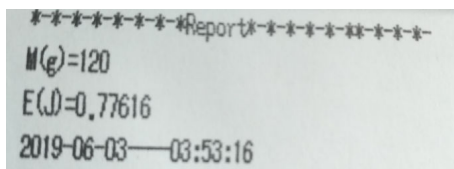
**Darts Method A&B**



**Method A Incremental Weights**



**Method B Incremental Weights**



**Brief Test Report**



**A&B Impact Head**

### Relative Models

PIT-01 Film Pendulum Impact Tester  
FBT-01 Falling Ball Impact Tester  
Charpy and Izod Impact Tester

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