TECHLABSYSTEMS

# DIT-01 Falling Dart Impact Tester

DIT-01 Falling Dart Impact Tester is applicable to determination of energy that causes plastic film or sheeting to fail under specified conditions of impact of a free-falling dart. This energy is expressed in terms of the weight (mass) of the missile falling from a specified height which would result in 50 % failure of specimens tested.

## Product Features

- 7-inch HD color LCD touch screen operation, menu interface, convenient for users to set test parameters quickly
- Dual test modes of Method A and Method B are available, other non-standard tests can be customized
- Embedded high-speed microcomputer chip control, simple and efficient human-computer interaction interface, providing users with a comfortable and smooth operating experience
- Electromagnetic dart releasing mechanism can release the dart automatically, which minimizes the errors caused by manual operations
- Pneumatic clamping of the sample, imported pneumatic parts, uniform clamping force
- Dual starting modes of manual and pedal switch and built-in observation light are convenient for users to perform test operations accurately

- Professional software supports display, output and printing of test results in multiple units
- Graphic display of the test process, clearly and intuitively showing the test results
- With a powerful data storage function, which can store more than 50,000 data
- Standardization, modularization, and serialization design concepts to meet the individual needs of users to the utmost extent
- Based on the flat design concept, a new design of the UI interface has been carried out to bring users a more concise, efficient and comfortable operating experience
- Equipped with micro-printer and standards RS232 interface, which is convenient to PC connection and data transmission.

## Test Principle

Before starting the test, choose test method, and estimate an initial mass and Δm. Start the test. If the first specimen fails, decrease the mass of the falling dart by Δm. If the first specimen is not a failure, increase the mass of the falling dart by Δm. Continue the test according to this rule. In brief, increase or decrease by Δm according to whether the former specimen is a failure or not. After 20 specimens, calculate the total number of failed specimens N. If N equals to 10, the test is over. If N is less than 10, add specimens and continue to test until N equals to 10. If N is greater than 10, add specimen and continue the test until the number of non-failure specimens reaches 10. Then the tester calculates the test results automatically according to specific formulas.

## Applications

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| **Basic Application** | Films & Sheeting | Impact resistance tests of plastic films, sheeting, composite films such as PE plastic wrap, stretch films, PET sheeting, various food packaging bags and heavy-duty bags, etc. (Specimen Thickness < 1mm |
| | Aluminum Foils & Aluminum Plastic Composite Films | Impact resistance tests of aluminum foils and aluminum plastic composite films. |
| | Paper & Paper Board | Impact resistance tests of paper and paper boards. |

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| **Extended Application** | Impact Tests with Falling Balls | Mount the specimen on specific clamp for falling ball impact test and select falling ball of certain weight for the impact test. Check the status of the specimen and determine the impact resistance of the specimen |
| | Impact Tests of Shoulder Lining | Mount the shoulder lining specimen to the specified clamp and select falling dart of certain weight for impact test. Check the status of the specimen and determine the impact resistance of the shoulder lining specimen. |
| | Impact Tests of Bottle Caps | The bottle caps are impacted from multiple angles by falling balls at specified height. Then observe whether the caps are broken, injured or fall off. |

## Technical Specifications

| Specifications | | DIT-01 |
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| Test Method | | Method A & Method B |
| Test Range | Method A | 50~2000g |
| | Method B | 300~2000g |
| Resolution | | 0.1g(0.1J) |
| Specimen Clamp | | Pneumatic Clamp |
| Gas Supply Pressure | | 0.6 MPa (Prepared by user) |
| Specimen Size | | >150mm × 150mm |
| Port of Gas Supply | | Φ8mm PU Tubing |
| Power Supply | | AC 220V 50Hz / AC 120V 60Hz |

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| Instrument Dimension | Method A：500 mm (L) × 450mm (W) × 1320 mm (H)<br>Method B： 500 mm (L) × 450mm (W) × 2160 mm(H) |
| Net Weight | 68 kg（Standard） |

## Standards

ASTM D1709, ISO 7765-1-1988, JIS K7124-1, GB/T 9639.1-2008

## Configuration

**Standard Configuration:** A Method Configuration, Touch Screen, Micro printer

**Optional Parts:** B Method Configuration, Professional Software and Communication Cable

Note: 1.The gas supply port of the instrument is Φ8 mm PU Tubing;
2.Customers will need to prepare for gas supply.