

## Drop Tower

# INTRODUCTION

MPM manufactures drop tower test machines for a wide variety of impact tests. The MPM drop tower systems can be configured to satisfy several ASTM standards including: ASTM E23, E208, E436, D3763, D256, D2444, and D6110. In addition to the above listed ASTM standards, MPM drop towers can be constructed to meet API standards such as the API recommended practice 5L3.

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# SYSTEM FEATURES

The MPM drop tower test machines can be provided with instrumented strikers, if requested. An instrumented striker option is used for treating applications that require measurement of absorbed energy. However, some of the standards listed in the introduction, such as ASTM E436 and API 5L3, are focused on dynamic tear measurement and do not require the use of an instrumented striker. Some important features of the MPM drop tower features are listed below:

- Rigid frame construction minimizes transverse play of the striker
- The test machine is equipped with a digital readout and control to accurately set the drop height
- The test machine is provided with an electrically driven motor for raising the weight to the desired drop height
- The test machine is equipped with a push button pneumatic weight release
- The base of the test machine is enclosed inside a six-foot tall acrylic enclosure with a door for safety during testing. The door is designed to permit easy access to the test machine anvils
- The test machine includes a safety bar to protect the operator while working on the test machine base
- Test machines which satisfy ASTM E208 and E436 are provided with excess test capacity with energy levels of up to 4,000 ft-lbs
- Test machines which are equipped with an instrumented striker have the following additional features:
  - Up to 1,000,000 data points per test
  - User specified data acquisition time range
  - User friendly software controls acquisition and data analysis



- High speed, 12-bit acquisition board
- Strain gage amplifier
- Instrumented striker
- Hardware/Software manual
- Software

Please refer to our Instrumented Impact Testing and In-Situ Heating & Cooling brochure for further information.

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## **TEST CONFIGURATION**

The MPM drop tower test machine design can accommodate various test geometries such as dynamic tensile, penetration, Charpy, Izod, dynamic tear, and impact penetration. The test machine base is a solid plate with an attachment connection that enables the various test specimen configurations to be quickly and easily set up. In addition, special purpose configurations can be provided. The striker tip is a threaded connection to the rail cart and can be quickly and easily attached. The rail cart allows for easy addition and removal of weights for energy capacity adjustment. An option is provided for an automatic height adjustment of the rail cart to the desired drop height position. A controller is provided and the user simply inputs the required drop height and the system moves the cart to that height.



*MPM drop tower test machine configured for ASTM D 3763 plastic puncture test*

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## FOR MORE INFORMATION

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