

MechT™ Impactor - Pendulum Impact Test Unit



MechT™ Impactor is a general purpose pendulum impact test unit with a special design arm that guides a striker for performing a dynamic impact test.

Award Winner

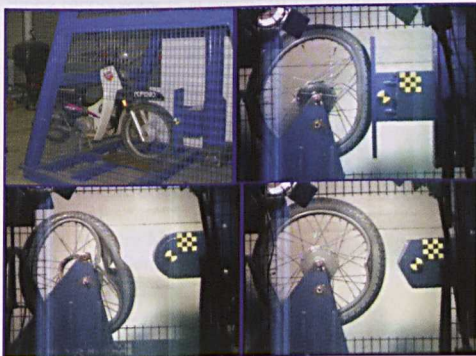
The special designed arm gives excellent controllability on center of percussion, provides supporting surfaces for ease of attaching a striker and additional masses, and minimizes twisting moments resulted during impact when attached with additional masses. The design of the test unit is customizable and scalable from small size testing such as for Standard Charpy Impact Test of ASTM E23 and BS EN 10.045, to structural component testing and also to a large size sufficient to conduct full scale dynamic crash tests for whole motorcycle and even a car for R&D purposes. The flexibility of varying the impact masses and striker locations allows the MechT™ Impactor to perform a wide range of impact test configurations. Other advantages are ease of installation and operation, low maintenance work and costs, economical setup and operation costs and simple sensor housing.

The MechT™ Impactor has been fully tested through a series of impact tests and several characteristics and performances have been determined for Model PutrArm 275.

The PutrArm 275 was able to provide consistent impact velocities at impact point with variation within 5%. The friction loss was found to be decreased with drop height (from 26% at 45° to 11% loss at 85°), implies greater mechanical efficiency can be achieved at higher impact speed. MechT™ Arm exhibited sufficient bending resistance as no significant permanent deflection has been detected, and no significant shock and vibration have been observed during and after impact with high-speed camera capturing at 1000 frame-per-second.



MechT™ Impactor



Potential Applications:

- Standard test for motorcycle and passenger car wheel for type-approval.
- Alternative tool for SAE J1981 Standard impact test.
- Standard impact test tool for ASTM E23 and EN 10.045.
- Component impact testing for automotive and motorcycle industries for safety assessment.

- Standard test of energy absorbing/dissipating materials such as for the regulations MS 594, ECE R12 (Annex 5), ECE R21 (Annex 4) and ECE R44 (Annex 17).
- Replacement for standard drop-weight impact test.
- Enable equivalent full-scale crash test of motorcycle and car at laboratory level.

For further information, kindly contact:

Assoc. Prof. Dr. Wong Shaw Voon
Department of Mechanical and Manufacturing Engineering
Faculty of Engineering
Universiti Putra Malaysia
43400 UPM, Serdang, Selangor
Malaysia

Tel: +603 8946 6339, Fax: +603-8656 7122

E-mail: wongsv@eng.upm.edu.my