

RAY-RAN

FALLING WEIGHT IMPACT TESTER



FALLING WEIGHT IMPACT TESTER (RR/FWT)

UNIVERSAL FALLING WEIGHT IMPACT TESTER

Designed and built with operator simplicity in mind, the Ray-Ran **Universal Falling Weight Impact Tester** is simply the best in its class. It is used to determine the energy required to break or rupture test specimens such as pipe, sheet, laminates, composites, ceramics and non ferrous metals for material and component evaluation to international testing methods such as ISO6603, ISO3127 and ASTM D2444 to name a few

Utilising both pneumatic and electrical functions, the apparatus is extremely versatile. The standard machine is supplied with a 2 meter variable drop height system which can reach impact velocities up to 6.26 m/s. With an impact energy range of up to 314 joules, even the toughest of materials can easily be tested.

Built with operator safety in mind, the apparatus has a full electrical interlock system preventing operation of the apparatus if a safety guard is open. It is supplied as standard with a solenoid operated carrier release mechanism for simple operation and a unique pneumatic carrier return system to ensure the carrier is safely returned to its set drop height for the next test to be performed.



A twin guide rail system is used to ensure a smooth repetitive drop of the load carrier perpendicular to the sample being tested. Load carriers are available for different energy ranges and are fitted with low friction bearing guides which prevent velocity and potential energy being lost as the carrier descends. Impact tups are supplied to international test standard methods, or to customers own individual requirements, which can simulate the mode of failure in actual service conditions or to analyse specific in-house quality control standards.

To conduct a test, prepared samples are placed in the enclosed chamber on their supporting fixture which can be adjusted vertically to accommodate different test sample sizes. On the standard machine pipe diameters of up to 400mm Ø can be tested easily. If the optional pneumatic clamping fixtures are used, the integrated safety system of the apparatus ensures that the clamp does not operate until the cabinet door is in the closed position.

THE METHODS OF TESTING ON THE *UNIVERSAL FALLING WEIGHT IMPACT TESTER* ARE:

Round the Clock Method

Lengths of pipe from a batch or production run are subjected to blows from a known mass which falls from a specified height as per test standard ISO 3127 & EN744.

Staircase Method

Lengths of pipe are subjected to blows from a known mass and shape but is dropped from differing heights depending on the results of each blow as per test standard EN1411.

The **Universal falling Weight Impact Tester** is ideal for product development and quality control within production, research and development labs and teaching institutions and will more than meet your testing requirements. Various drop heights are available as well as larger bases to accept larger pipe diameters and Tup (Striker) shapes to customers individual requirements.

TECHNICAL SPECIFICATION

- 2 meter drop height test machine
- Twin guide rail system
- Low friction carrier bearing system
- Solenoid release mechanism
- Pneumatic carrier return
- Mechanical raise/lower fixture platform
- Pipe, sheet, Izod, Charpy, Tension, Component testing compatible.
- Variable velocity up to 6.26 m/s
- Impact energies up to 314 Joules
- Electrical safety interlock
- 110 or 240 volt available
- Operating pressure 100 PSI (7 bar)
- Conforms to ISO6603, ISO3127 and ASTM D2444, etc
- Product user manual
- CE declaration certificate
- Traceable calibration certificate
- 1 year return to base warranty

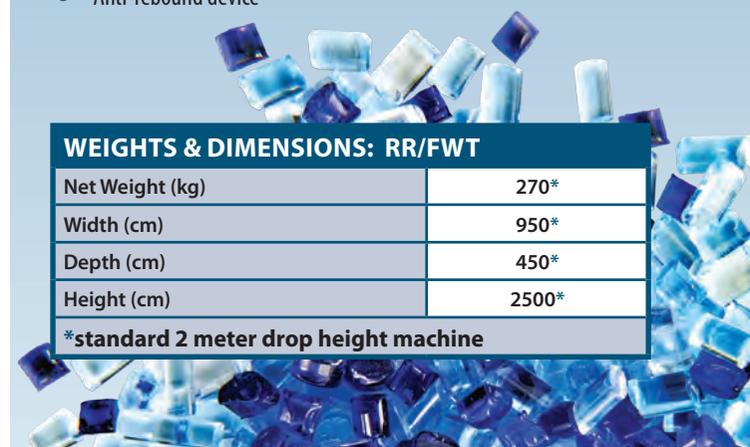
OPTIONAL ANCILLARIES

- Extended drop height
- Increased chamber capacity
- "V" rest pipe fixture 12mm – 75mm dia
- "V" rest pipe fixture 75mm – 400mm dia
- Plate or Plaque specimen holder (manual clamp)
- Plate or Plaque specimen holder (Pneumatic clamp)
- Izod Fixture
- Charpy Fixture
- Customized Fixtures
- Anti-rebound device
- Drop Height Power Feed Adjustment
- Digital Height Scale
- Velocity indicator
- Drop weight carriers from 0.5kg – 16kg as standard
- Customized drop weight carrier
- Impact Heads (Tups) to International test standards
- Customized Impact Heads (Tups)
- Variable weight system
- Low Temperature Chamber

WEIGHTS & DIMENSIONS: RR/FWT

Net Weight (kg)	270*
Width (cm)	950*
Depth (cm)	450*
Height (cm)	2500*

*standard 2 meter drop height machine



AVAILABLE OPTIONS

ANTI REBOUND

The apparatus can be supplied with an electrically operated anti-rebound system to prevent the load carrier rebounding on to the sample after its initial impact preventing further damage to the test specimen.

DIGITAL HEIGHT SCALE

This optional feature can be fitted to accurately determine the drop height of your weight carrier. The fitted LED digital readout clearly displays the drop height in mm or inches.

DROP HEIGHT POWER FEED ADJUSTMENT

To further enhance the apparatus, an optional powered lift can be fitted to raise and lower the drop height settings. This feature is especially useful if your testing drop heights are in excess of 2 meters.

VELOCITY INDICATOR

Fitted as an option, this device accurately determines the falling velocity of the weight carrier making impact energy calculations even more precise.

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FIXTURES

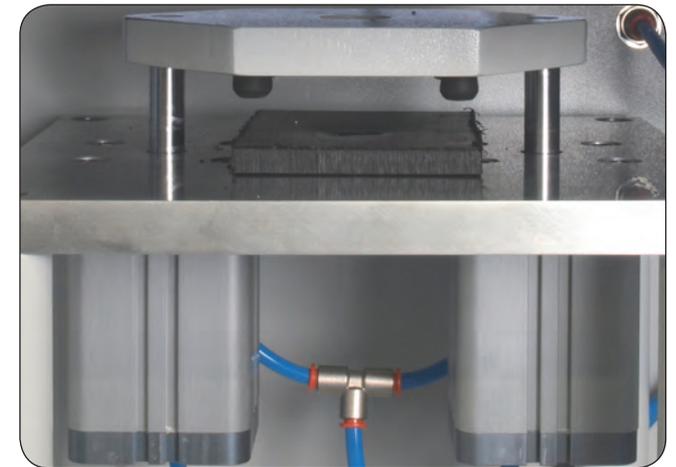
By changing the supports and clamping mechanisms, along with the shape of the Tup, and variable weights the Ray-Ran **Universal Falling Weight Impact Tester** can be manufactured to meet any test specification or customer's requirement making the equipment truly bespoke. Typical test fixtures available include

PIPE TESTING "V" REST

The test is used for the examination of pipe sections and tubing for impact strength properties as complete segments of pipe. Sample diameters from as little as 12mm Ø up to 400mm Ø can be tested on the standard machine. The pipe is supported in a 120° angled "V" support as is impacted by the load carrier in a single drop. The support rests can be manufactured to any test standard or customer requirement.

FLAT PLATE / PLAQUE TESTING

Testing of flat plates or plaques such as laminates and



composites can easily be tested using the flat plate clamping fixture. It is offered with various support rings to test to various international test standards and customer's own specific testing requirements and can be either manually or pneumatically operated.

Fixtures for conducting **Izod** and **Charpy** tests are also available.

For specific component testing Ray-Ran can design and manufacture bespoke clamping fixtures to meet customer's individual testing requirements and parameters.

