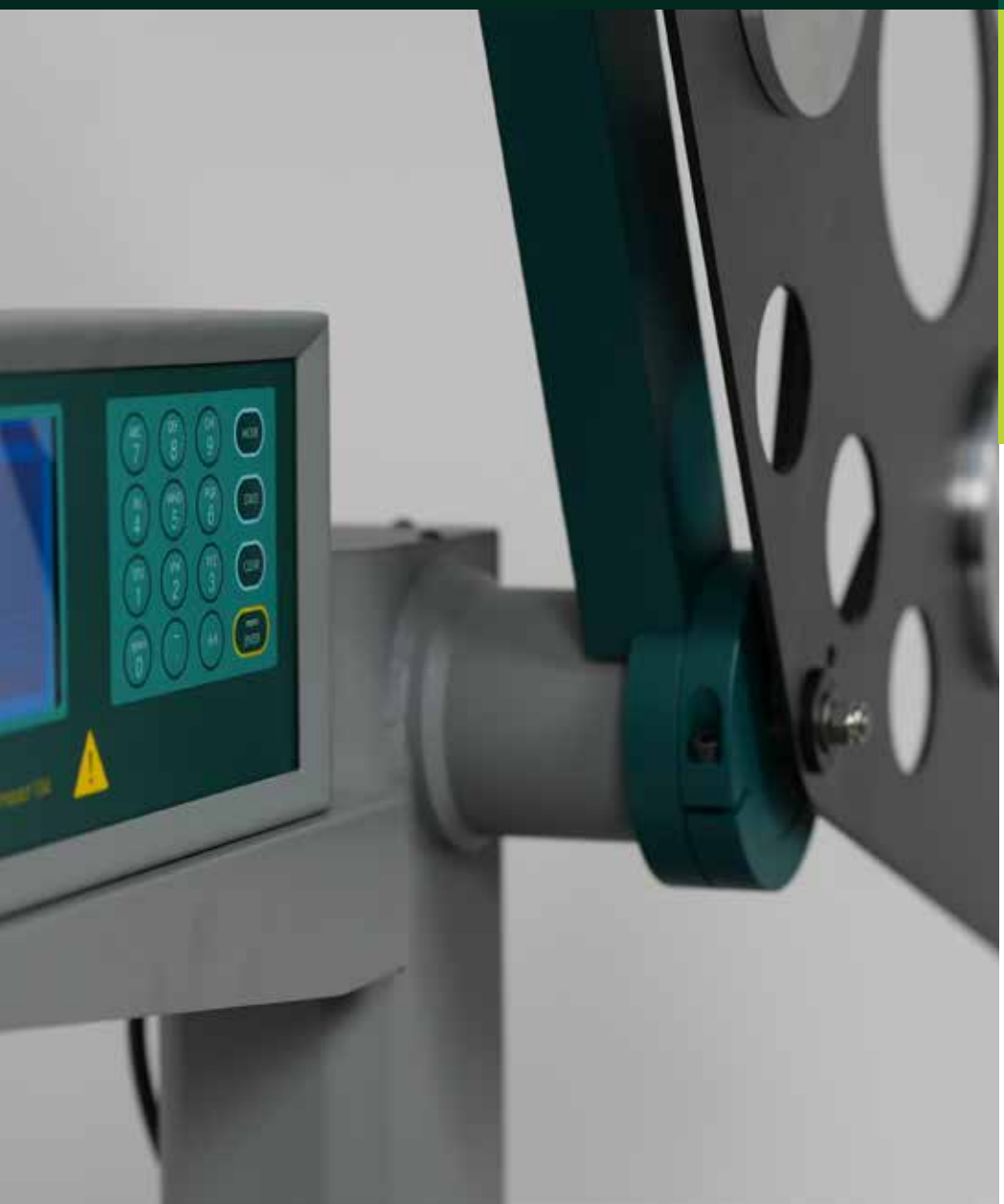
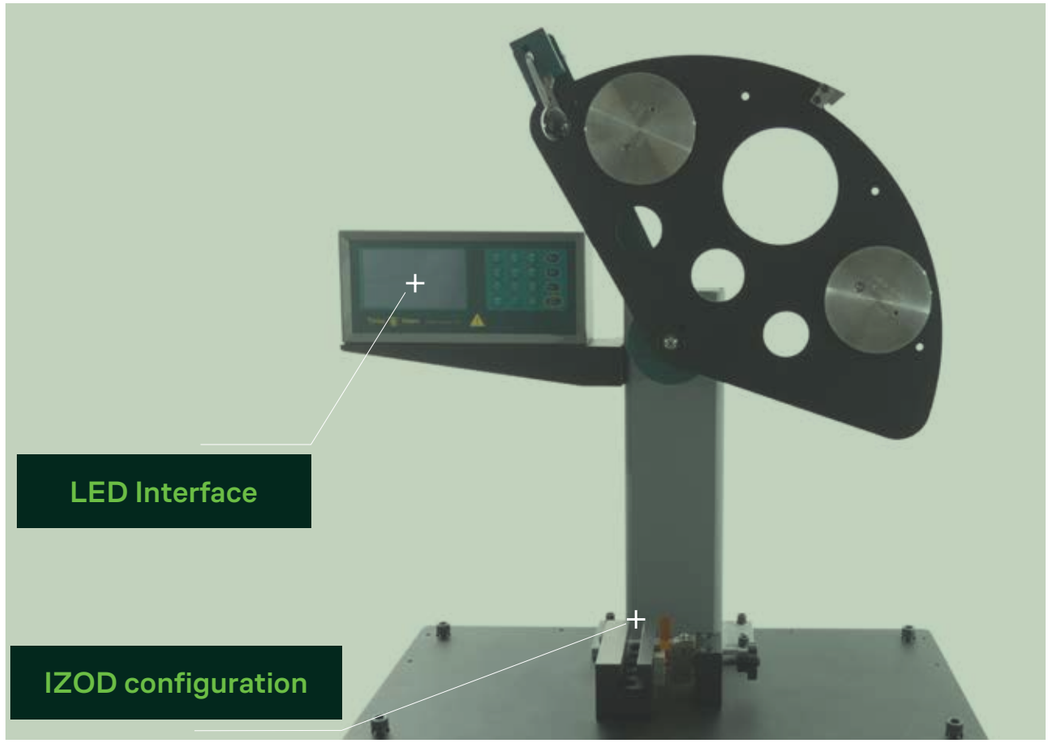
IT Series

Low capacity
Impact Testing System



Tinius Olsen

IT Series - Low capacity



IT504 for IZOD *[12003023]* with weights for 5.0J range (ISO 179) *[12002022]*

The Model IT503 plastics impact tester, together with the Model IT504, continue to set the industry standard for versatility, ease of operation and display of information with high resolution.

These systems are capable of determining the impact resistance using either a Charpy or Izod configuration, without changing the entire pendulum. The user attaches the appropriate striking tup on the pendulum and the specimen clamp or anvils in the base of the unit to test plastics in accordance with ASTM D256 (Izod impact), ISO 179 (Charpy impact), ISO 180 (Izod impact), ASTM D6110 (Charpy impact), ASTM D4812 (Unnotched Cantilever Beam impact), ASTM D4508 (Chip impact), ASTM D950 (Adhesive Bond impact) and other similar standards.

The aerodynamically designed compound pendulum provides maximum rigidity in the direction of the impact and virtually eliminates any windage losses. Pendulum capacity is easily changed by adding on any one of seven optional weight sets.

For easier and more flexible impact testing on plastics, the system can be connected to a PC running Tinius Olsen's Horizon software for data capture and analysis.

The energy absorbed in breaking the specimen can be configured in SI, metric or English units. It is determined by an optical encoder mounted on the shaft of the frame and is based on the latched height of the hammer (relative to the zero potential energy point), the maximum post-impact height of the hammer, and the frictional losses of the system. Energies of less than 0.03% of the pendulum capacity can be accurately resolved.

The IT503 is supplied as standard with a 'low blow' feature, which provides a convenient and reliable means of releasing the pendulum from a lower than usual height, so allowing testing at lower impact velocities and energy levels. Additionally, the Model IT503 is supplied with all necessary interlocked safety shielding to protect the operator and bystanders from the broken samples.

For easier and more flexible impact testing on plastics, the system can be connected to a PC running Tinius Olsen's Horizon software for data capture and analysis.

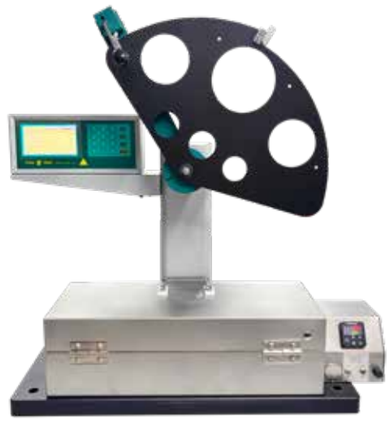
The standard capacity range when using the compound pendulum is from 2J to 2.82J; this can be increased to a maximum of 25J, using different weight sets to take you to capacities of 5J, 50in.lb, 7.5J, 100 in.lb, 15J, 200in.lb, and 25J. Outside of this range, the compound pendulum needs to be replaced by individual pendulums. The capacities of optional pendulums range from 0.5J and 1J to 50J.

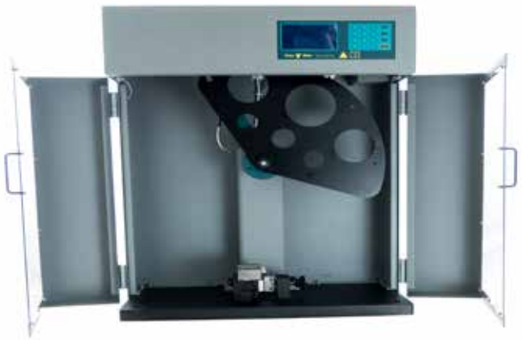
Horizon software

+ User-selected reporting and exporting formats.
+ Built-in SPC programs for X-bar, R and frequency distribution chart/histograms.
+ Test mode allows configuring, running and saving of tests and results.
+ Recall mode permits viewing of previously saved results and performs database maintenance.
+ Horizon Impact Primary Platform; for Plastic & Metal *[21001197H-PP5]*

Model IT504 – In this configuration, the system has been equipped with cold box *[12003022]*. Liquid nitrogen is the typical medium used to cool the specimen.

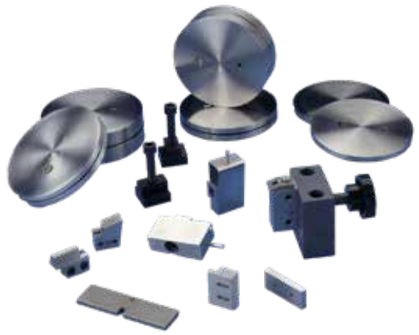
The heavy weight pendulum *[12002126]* has been added with a 50J weight sets *[12002134]*.





Model IT503 *[12003032]* – the model complies with CE requirements and cannot operate if the interlocked doors are open.

Selection of add-on weights *[12002017], [12002018], [12002019]* for compound pendulum, strikers *[12002026]* and supports *[12002028]*.



Key Features

+ Aerodynamic compound pendulum
+ Selectable energy units of J, in.lbf, ft.lbf, kgf.m and kgf.cm
+ Selectable impact resistance/strength calculations in ft.lbf/in, J/m, in.lbf/in, kgf.m/m, ft.lbf/in^2, kJ/m^2, in.lbf/in^2 or kgf.m/m^2.
+ Break type input options of complete, hinge, partial, non-break and necking.
+ Automatic or manual toss correction.
+ Auto-calibration for bearing windage and friction
+ Automatic or manual update of specimen number.
+ Real-time display of energy is available for verifying the display accuracy against traceable measurements of pendulum height and weight.
+ On the Model IT503, interlocked safety doors ensure that the pendulum cannot be released with the doors open.

Optional Features

+ Low temperature chambers
+ Separate 0.5J, 1J and 50J hammers

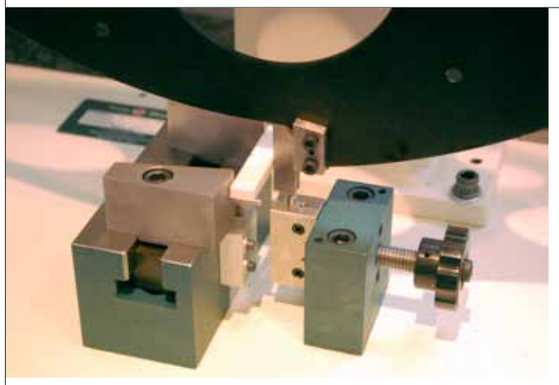
IT503/IT504 Specifications

The primary difference between the IT503 and the IT504 is that the Model IT504 is supplied without the interlocking safety shielding.

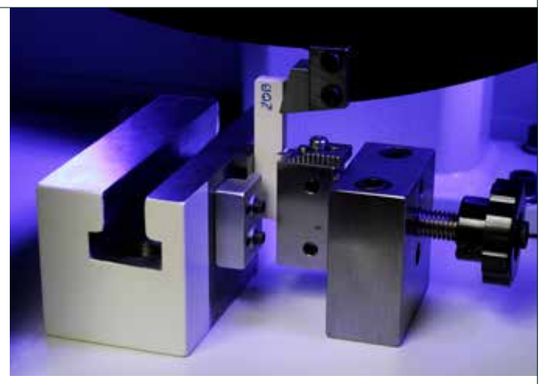
Pendulum capacity	J	2.82
	ft.lb	2.08
	in.lb	25
Pendulum capacity with low blow	J	2.75 to 2
	ft.lb	2.03 to 1.475
	in.lb	24.38 to 17.73
Pendulum capacity with added weights	J	up to 25
	ft.lb	up to 18.44
	in.lb	up to 221.63
Drop height	m	0.61
	ft	2
Impact velocity	m/s	3.46
	ft/s	11.35
Dimensions* (WDH) [for IT503]	mm	660 x 380 x 840
	in	26 x 15 x 33
Weight	kg	110
	lb	240

* Width of systems include total swing clearance
Specifications are subject to change without notice

Configurations



Charpy configuration, with the horizontal specimen on supports in front of the anvils.



Izod configuration shown, with one end of the specimen clamped in position.

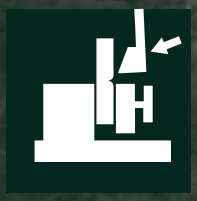
[Above] Model 899 Impact Specimen Notcher *[12002045]*
[Below] Model 799 Notch Depth Verification Device *[12002048]*

Model 899 Specimen Notcher

The Tinius Olsen Model 899 Impact Specimen Notcher for Plastics is designed to machine a notch in a plastic specimen in accordance with ISO 179, ISO 180 (type A notch specimen), ASTM D256 and ASTM 6110. Prior to performing tests, the specimens must be notched in order to create a stress riser and to predict the point of fracture.

The Specimen Notcher for Plastics can accurately prepare up to 28 specimens of 3.2mm (1/8in) thickness at one time. This notcher features an air cooling system that directs air flow at the cutting area to reduce the risk of thermal degradation of the specimens. A clear safety cover over the cutting area protects the operator, while doubling as an attachment for a vacuum system (not supplied) to remove chips from the cutting area. After samples are loaded, the operator initiates the automatic notching cycle by simply pressing a button. Both cutter speed and feed rate are adjustable to work with a variety of materials.

After the notching process is completed, the notch depth can be verified by using the Model 799 Notch Depth Verification Device. Optional cutting tools are available to produce ISO type B and C notches.



Plastic Impact System

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