



Impact Test Systems for Plastics



Model IT 503

The new model IT 503 plastics impact tester, together with the model IT 504, continues to set the industry standard for versatility, ease of operation, and display of information with high resolution.

These machines are capable of determining the impact strength using either a Charpy or Izod configuration, without changing the 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.

The energy absorbed in breaking the specimen can be configured in SI, metric, or English units and is determined by an optical encoder mounted on the shaft of the machine and is based on the latched height of the hammer (relative to the zero potential energy point), the maximum post-impact height of the ham-

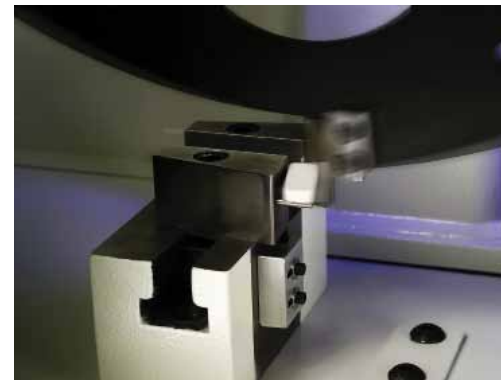
mer, and the frictional losses of the machine. Energies of less than 0.03% of the pendulum capacity can be resolved and this resolution is vastly superior to dial type displays and other currently available displays.

Both the IT 503 and IT 504 come with a standard "low blow" feature. This provides a convenient and reliable means for releasing the pendulum from a lower than usual height, allowing testing at lower impact velocities and energy levels. Additionally, the model IT 503 is supplied with all necessary safety shielding to protect the operator and bystanders from the broken samples.

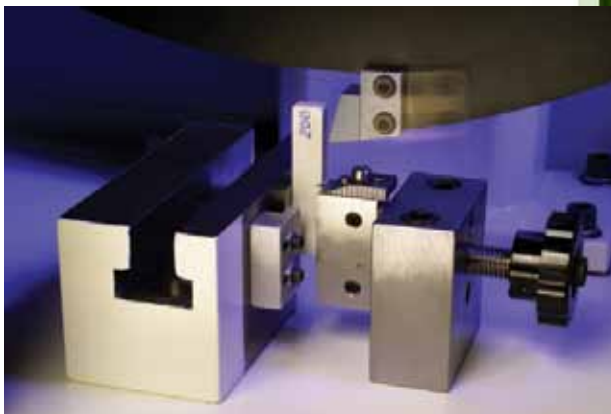
To make impact testing on plastics easier and more flexible, the machines can be connected to a pc running Tinius Olsen's impact software.

Key Features of Model IT 503

- Aerodynamic compound pendulum that can accommodate weights to increase test capacity
- Interlocked safety doors to ensure pendulum cannot be released with these doors open
- Simple and rapid change between Izod and Charpy test setup
- Conforms to all applicable European CE Directives



Close-up of Charpy test setup.



Close-up of Izod test setup.

Model IT 503
Plastics
Impact Tester.



Model IT 504

The model IT 504 continues to set the industry standard for accuracy, versatility, ease of operation, and display of information with high resolution.

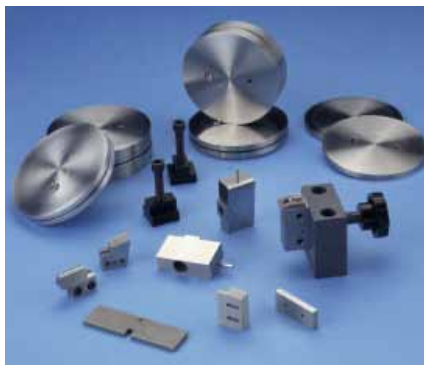
As with the model IT 503, Izod and Charpy impact fixtures can be easily added and removed via the T-slotted block, making the IT 504 one of the most versatile machines available.

Key Features

- Aerodynamic compound pendulum
- Selectable energy units of J, in.lbf, ft.lbf, kgf.m and kgf.cm
- Selectable strength calculations in ft.lbf/in, J/m, in.lbf/in, kgf.m/m, ft.lbf/in², kJ/m², in.lbf/in², or kgf.m/m²
- 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

Optional Features

- Hot and cold chambers
- Instrumentation package for impact testing
- Separate 1J and 0.5J hammers

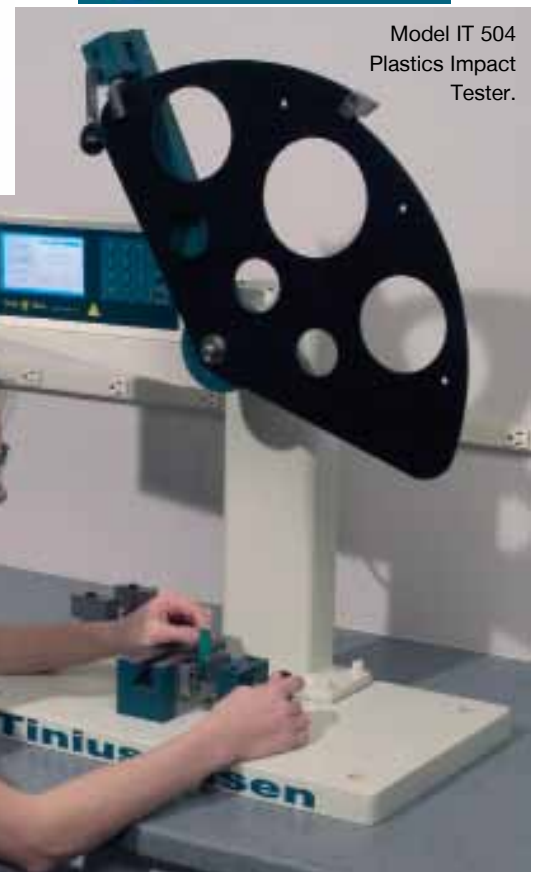
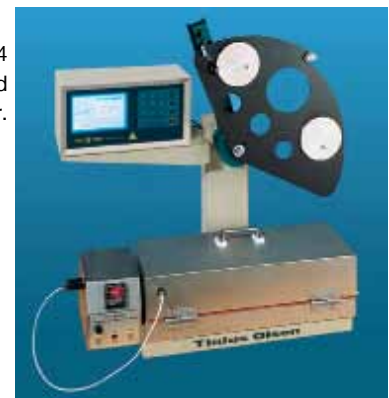


Optional weight sets, clamps, anvils, and striking tups.

TECHNICAL SPECIFICATIONS		
BASIC PENDULUM CAPACITY	J ft.lb in.lb	2.82 2.08 25
– WITH LOW BLOW	J ft.lb in.lb	2.75 to 2 2.03 to 1.475 24.38 to 17.73
INCREASED PENDULUM CAPACITY	J ft.lb in.lb	add-on weights available for up to 25 J add-on weights available for up to 18.44 ft.lb add-on weights available for up to 221.63 in.lb
DROP HEIGHT	m ft	0.61 2
IMPACT VELOCITY	m/s ft/s	3.46 11.35
POWER		110/220 VAC, 50/60 Hz, 1ph
DIMENSIONS W x D x H	mm in	660 x 380 x 840 26 x 15 x 33
WEIGHT	kg lb	110 (90) 240 (200)



Model IT 504 shown with hot and cold chamber.



Model IT 504 Plastics Impact Tester.

Impact 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, 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 Tinius Olsen Model 899 Impact Specimen Notcher for plastics can accurately machine up to 28 3.2 mm (1/8") thick specimens at one time.

The Model 899 Specimen notcher features an air cooling system that directs air flow at the cutting area to reduce the risk of thermal degrada-

tion 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.

Routine operation of the Model 899 Impact Specimen Notcher is automated and requires minimal operator supervision. After samples are loaded, the operator initiates the automatic notching cycle by simply pressing a button.

After the notching process is completed, the notch depth can be verified by using the Model 799 Notch Depth Verification Device.



Model 899 Impact Specimen Notcher.



Model 799 Notch Depth Verification Device.

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



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