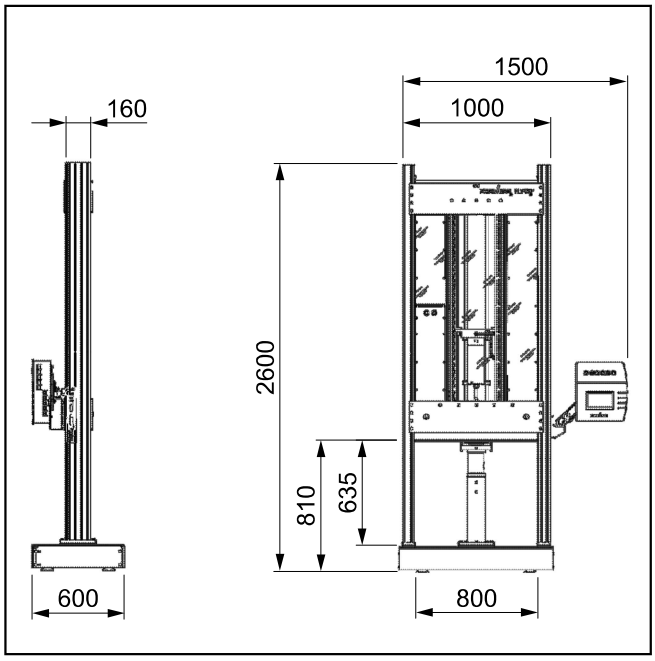
Zwick / Roell

Product Information

Amsler HIT230F drop weight tester for multiaxial puncture test

CTA: 217134 217130

Amsler HIT230F, multiaxial puncture test



Amsler HIT230F, multiaxial puncture test, dimensions

The small drop weight tester for puncture tests
With a maximum impact speed of 4.4 m/s and a drop weight of 23.5 kg, this drop weight tester is ideally suited for puncture tests to ISO 6603-2. One impressive feature is the excellent test area accessibility, enabling rapid completion of test series including direct feeding of temperature-conditioned test plates. When it comes to efficiency and ergonomics, this drop weight tester can't be beat.

Applications
The Amsler HIT230F is ideally equipped for multiaxial impact puncture tests on plastics. The range of application includes material characterization using standard specimens in accordance with established research and development and quality assurance standards.

- Multiaxial puncture test to ISO 6603-2, ASTM D3763, at ambient temperature and in extended temperature range

Advantages and features Amsler HIT230F

Ergonomics & Efficiency

- Excellent test area accessibility, enabling rapid completion of test series.
- Easy, manual feeding of cooled specimens without installation of a temperature chamber.
- No manual opening of safety devices in the test area.
- Automatic series mode in testXpert III allows for series testing without operator interaction between the individual specimens.

Intuitive and workflow oriented touch operation

- All test-related settings are grouped logically and are separated from higher-level system settings. The operator is guided through test configuration step by step.
- Optimal coordination of testing and evaluations between drop weight tester and software.
- Display of measuring graphs on the instrument to allow for direct and timesaving selection of the type of damage.

Reliable test results

- High natural frequency allows for accurate test results.
- High data acquisition rate of 4MHz for all measurement channels ensures measuring graphs at the best resolution.
- Large transient memory enables measurement values to be saved in full resolution for brittle and ductile materials.

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Advantages of a temperature conditioning box relative to a temperature chamber for testing of plates

At low temperatures impact strength is a critical characteristic value of the material used. For cooling of the specimens, ZwickRoell offers a temperature conditioning box for the Amsler HIT230F and Amsler HIT600F.

For testing at low temperatures the specimens are first conditioned in this temperature conditioning box.

The specimens are then placed one after the other directly from the temperature conditioning box into the drop weight tester and tested within a time period of 5 sec. (per specimen).

This method is significantly faster when compared to the installation of a temperature chamber. The temperature conditioning box can also be easily moved and used to cool other specimens.

CTA: 45489

Specimen cooling box

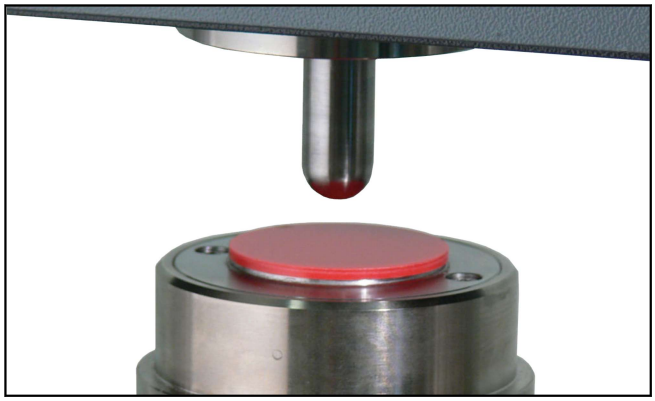
Accessories

For performance of a multiaxial puncture test, necessary accessories are based on the corresponding standard. The selection of an impactor and appropriate mountings and clamping rings is required.

Impactor

The innovative design of the entire force measurement chain delivers very low-noise measured values. This ensures reliable detection of characteristic material properties in the force-deformation curve. Every impactor is instrumented with a Piezoelectric sensor. It is used to measure the force and calculate the deformation of the specimen (travel). A separate travel measurement is not necessary. The impactor is selected according to standard or the expected maximum force, and must always be combined with the corresponding clamping ring. All impactors are manufactured with hardened steel.

CTA: 45578



Impact body with sample

Mountings & clamping rings

Depending on the diameter of the impactor, a pair of clamping rings has to be selected, which includes a support ring (bottom) and a clamping ring (top). A specimen is securely gripped between the two clamping rings with use of the drop weight tester's pneumatic clamping mechanism. Depending on the test standard or the inner diameter of the clamping rings, a corresponding mounting is selected. The mounting has a solid structure to minimize deformation of the specimen support, whereby reliable test results are achieved. In addition, the mounting collects the specimen remains in the inner free space. The mounting also provides a fixture for unclamped testing.

CTA: 45580

Impactor with clamping ring

All data at ambient temperature.

Subject to change in the course of further development.

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Technical data

Type **Item No.**	**Drop weight tester Amsler HIT230F** **1078760**	
Potential energy, without acceleration unit, max.	230	J
Potential energy, min.	25.4	J
Drop height, dependent upon the testing equipment, max.	1000	mm
Drop height, dependent upon the testing equipment, min.	110	mm
Drop weight	23.5	kg
Specimen thickness, max.	10	mm
Impact velocity, dependent upon the testing equipment, max.	4.4	m/s at 1 m drop height
Impact velocity, dependent upon the testing equipment, min.	1.5	m/s
Gripping force of clamping unit	6 ... 9	kN
Force signal resolution	16	bit
Measured-value rate (force signal), max.	4	MHz
Dimensions		
Height	2600	mm
Width	1000	mm
Widthwith instrument electronics	1500	mm
Depth	600	mm
Weight, with typical accessories, approx.	400	kg
Average noise level at v_{max} measured at 1 m distance from the front of the machine	60	dB(A)
Display	Capacitive touch display	
Scope of delivery	Ethernet cable Drop weight of 23.5 kg Light barrier for determination of impact velocity Pneumatic clamping unit	
Power input specifications		
Power supply	100 ... 240	V
Phases	1Ph/N/E	
Permissible voltage fluctuation	± 10	%
Power consumption (full load), approx.	0.5	kVA
Power frequency	50/60	Hz
Compressed air		
Supply pressure	5.5 ... 8	bar
Operating pressure	5 ... 8	bar
Compressed air consumption (compressed air) per impact or test	2	l
Required air-supply output-rate	600	l/min
Compressed air connector plug	DN 7	
Maintenance unit	Mounted on instrument	

All data at ambient temperature.

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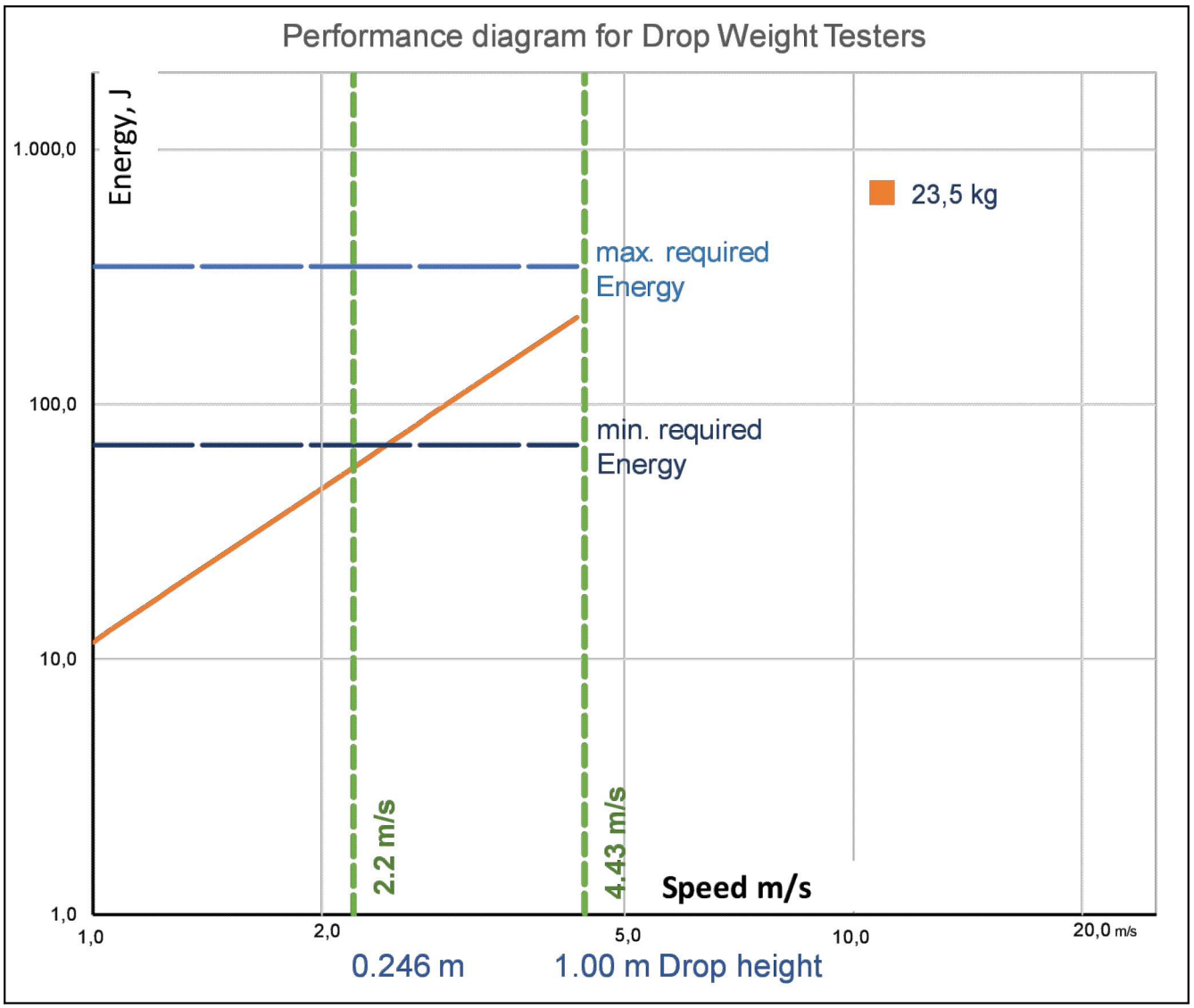
CTA: 216417



Performance diagram for Amsler drop weight tester HIT230F