

## Product Information

### Amsler HIT230F for pre-damaging plates (CAI)

CTA: 217139 217131



Amsler HIT230F, CAI

#### The small drop weight tester for CAI

With a maximum impact speed of 4.4 m/s and drop weights between 2.04 and 10.2 kg, this drop weight tester is ideally suited for pre-damaging CAI specimens in accordance with various standards. One impressive feature is the excellent test area accessibility, enabling rapid completion of test series. When it comes to efficiency and ergonomics, this drop weight tester can't be beat.

#### Applications

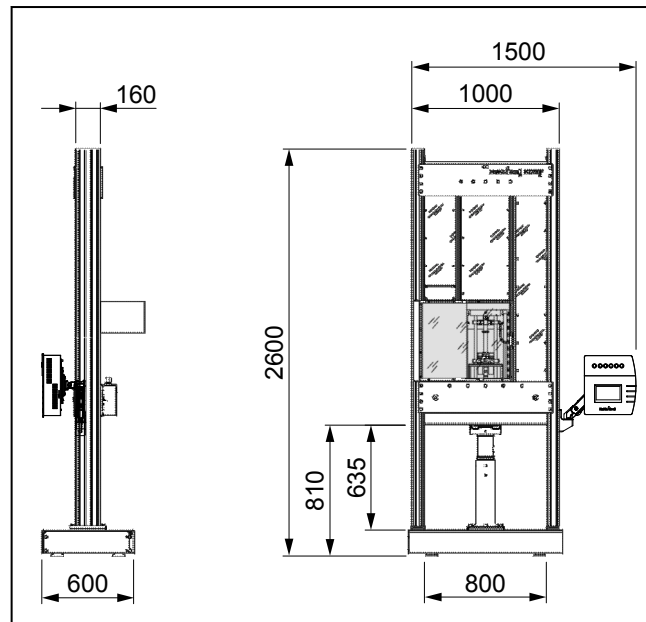
The Amsler HIT230F is ideal for pre-damaging composites plates for the CAI (compression after impact) test used widely in the aerospace industry.

- Pre-damaging of fiber-reinforced composites test plates for the compression after impact (CAI) test to Airbus AITM 1-0010, Boeing 7260, ISO 18352, DIN 65561, ASTM D7136, DIN EN 6038

#### Advantages and features Amsler HIT230F

##### Ergonomics & Efficiency

- Excellent test area accessibility, enabling rapid completion of test series.
- 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.



Amsler HIT230F, CAI, dimensions

#### 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 measuring frequency allows for accurate test results.
- High data acquisition rate of 4MHz for all measurement channels produces measuring graphs at the best resolution.
- Large transient memory enables measurement values to be saved in full resolution for brittle and ductile materials.
- The actual impact velocity is precisely determined shortly before the point of impact.
- The damage energy is steplessly and precisely set through variation of the drop weight and drop height.

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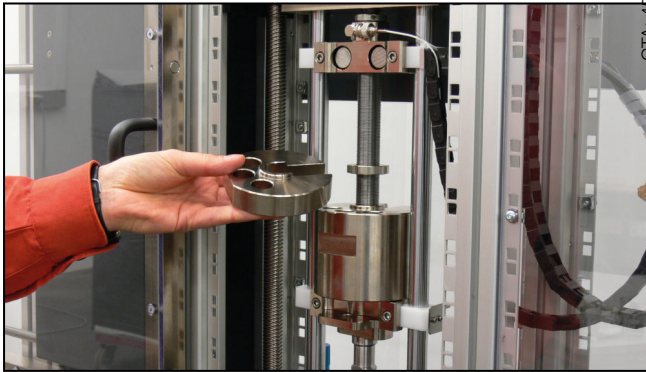
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#### Mass carriage

The mass carriage with single masses of 2.04 kg to 10.2 kg in 0.5 kg increments and the variation in drop height enable accurate setting of the damage energy. The mass carriage also includes a single mass holder that is attached to the drop weight tester profile. It can be used for safe storage of single masses that are not installed.

CTA: 45563



CTA: 45512

Quick and easy change of the single masses

#### CAI drawer unit

The CAI drawer unit carries the clamping device. The clamping device can therefore be easily moved out of the test axis, allowing for quick and easy specimen gripping.

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CTA: 204519

Amsler HIT230F, CAI drawer unit for CAI clamping device

#### Anti-rebound device

A mechanical device stops the drop weight after first impact, preventing multiple impacts. This ensures that the defined damage energy is only applied once.

#### Impactor

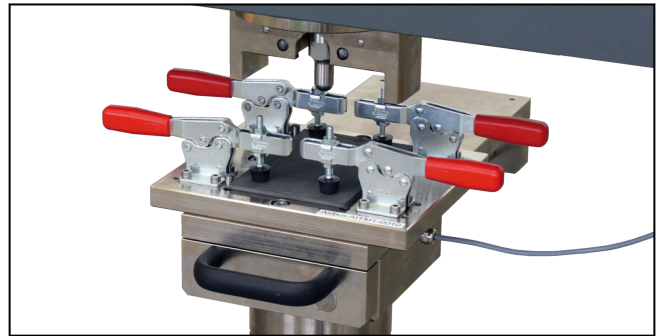
The innovative design of the force measurement chain delivers very low-noise measured values. The targeted pre-damage application can thereby be monitored in detail.

#### Light barriers

The actual impact velocity is precisely determined shortly before the point of impact.

#### Accessories

The appropriate clamping device must be selected based on the standard or specimen shape. A distinction is made between Boeing and Airbus.



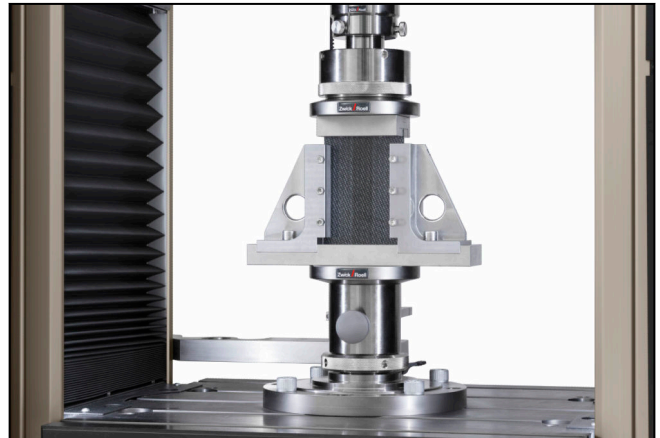
CAI clamping device

#### CAI Compression Test

The specimens that are pre-damaged in the drop weight tester are tested using a special compression test fixture in a static materials testing machine to determine residual strength. The compressive forces that arise are typically very high.

A special compression test fixture is used to load the test plates so they do not buckle. These test plates differ according to standard:

- ASTM, Boeing, SACMA and DIN: all four sides are guided, but not gripped.
- ISO, EN and Airbus standards: the upper and lower ends of the specimen are gripped. The sides are guided with linear contact.



CAI compression test fixture, Airbus version

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#### Technical data

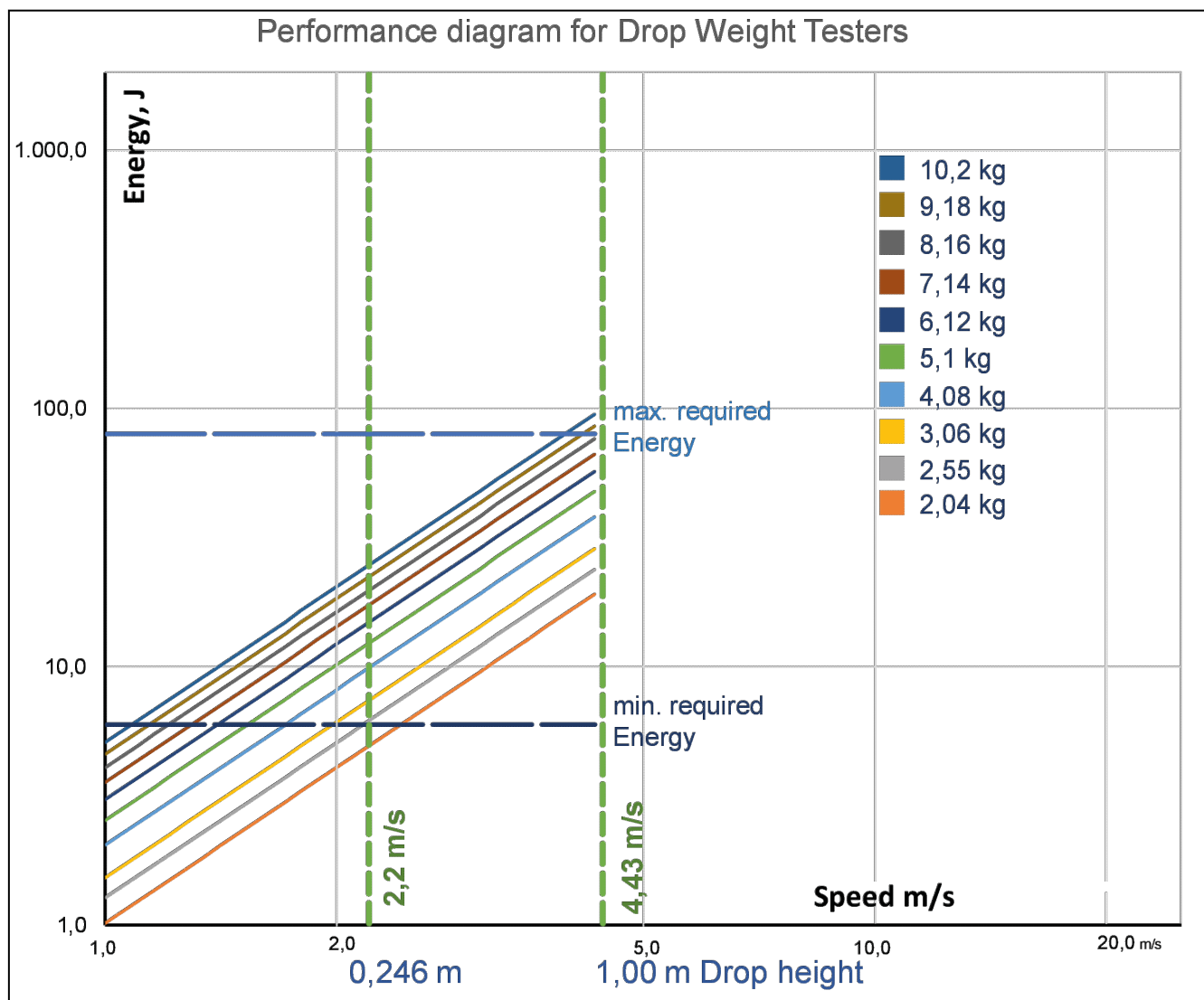
| Type<br>Item No.  | Drop weight tester Amsler HIT230F<br>1078761  |                        |
|---|---|------------------------|
| Potential energy, without acceleration unit, max.                                       | 100   | J                      |
| Potential energy, min.  | 2.2   | J                      |
| Drop height, dependent upon the testing equipment, max.                                 | 1000  | mm                     |
| Drop height, dependent upon the testing equipment, min.                                 | 110   | mm                     |
| Drop weight, max.   | 10.2  | kg                     |
| Drop weight, min.   | 2.04  | kg                     |
| Weight level, min.  | 0.51  | 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                    |
| 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                     |
| Widthwith instrument electronics and open safety door                                   | 1735  | mm                     |
| Depth   | 695   | mm                     |
| Weight, with typical accessories, approx.   | 400   | kg                     |
| Gripping force of the clamping fixture  | Manual  |                        |
| 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<br>Single masses from 2.04 kg to 10.2 kg in 0.5 kg increments<br>Light barrier for determination of impact velocity<br>Impactor Ø 16 mm incl. Piezo load cell $F_{nom}$ 50 kN, with spherical impactor tip<br>Anti-rebound device for avoidance of multiple impacts<br>CAI drawer unit for CAI clamping device |                        |
| <b>Power input specifications</b>   |   |                        |
| 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                     |
| <b>Compressed air</b>   |   |                        |
| 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                  |

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| Type                          | Drop weight tester Amsler HIT230F |
|-------------------------------|-----------------------------------|
| Item No.                      | 1078761                           |
| Compressed air connector plug | DN 7                              |
| Maintenance unit              | Mounted on instrument             |

CTA: 216467



Performance diagram for Amsler drop weight tester HIT230F, CAI