Vertical impact drop tester
Dynamic shock test bench

MAIN FUNCTIONS

The impact drop tester is ideal for characterizing the shock resistance of a product (specimen or component) for measuring its energy absorption capacity or for checking its proper functioning after impact (“shock resistant”). The shock is ensured by a drop weight which strikes the sample with heights and a mass which are adjustable by the operators. A set of high-frequency sensors enables to measure the force, position and speed of the weight during impact. The machine is fully secured thanks to its system of protective casings, which avoids any risk of projection during the impact tests.

APPLICATIONS

- SHOCK ABSORBERS: Possibility to test all types of absorbers (hydraulic, motorcycles, trains, etc.).
- SPRINGS: Springs of different materials (steel, nickel, chromium, carbon, titanium, etc.).
- BICYCLE/MOTORCYCLE HELMETS: Impact resistance test of bike and motorcycle helmets of different sizes.

ADVANTAGES

- MEASUREMENTS: High frequency recording of measurements.
- MOTORIZED ADJUSTMENT: Precise drop height adjustment by automated lifting.
- RELEASE SYSTEM: Automatic release system fully secured by a certified automaton.
- OPERATOR SAFETY: Safety striker ensuring total protection for the operator.

OPERATING PROCEDURE

The user places the specimen to be tested in complete safety. After selecting the weight value and the drop height, the machine automatically adjusts the drop height and releases the weight on the test specimen. Measurements of height, speed, force and energy are automatically recorded at high frequency during the impact. An automatic analysis system makes it possible to calculate the impact energy, the energy absorbed and the energy returned.

TECHNICAL CHARACTERISTICS

- Displacement measurement resolution: 0.1 mm
- Max drop operational height: 4.3 m
- Total height: 5.5 m
- Drop weight: 47.6 kg to 512 kg

OPTIONS

- Automatic charger
- Force/displacement and energy measurement by piezo-electric force sensor
- Prestress booster

TESTS ACCORDING TO STANDARDS:

NF EN ISO ASTM DIN

1 - Automatic lifting system door
2 - Weights
3 - Remote control console
4 - Protectiveorie under test
5 - Product under test