



# Hegewald & Peschke

Meß- und Prüftechnik GmbH

## Product Information

# Multi impact tester

e. g. for stone impact tests



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## Application:

- Determination of the impact behaviour of e.g. single or multi-layer coatings and paints or plastic composites
- Testing of components for their resistance to stone impact
- Possible test objects and materials: All objects that are at risk of stone impact, e.g:
  - Vehicle parts such as radiators, bonnets, wheel rims, windscreens
  - Objects on traffic routes, such as signage
  - Splinter- and hail-proof textiles, roofing materials or windows, plastics, composite materials

## Features:

- Test stand tightly encased on all sides - neither bullets nor splinters can escape
- Rear side inside with easily exchangeable plywood panels for energy absorption of misses
- Shooting device can be conveniently positioned freely from the outside
- Pneumatic clamping to secure the firing device in a defined position
- Test piece inclination can be freely adjusted by one or two axes at an angle to the firing device
- Test piece positions can be read off reproducibly from scales
- Compressed air reservoir - high constancy of test conditions over all shots of the test series
- Monitoring of the doors by pneumatic limit switches (firing device cannot be triggered when the door is open)

## Test setup:

The technological test of the bullet test is based on an interchangeable barrel, which has a slightly larger inner diameter than the bullets used. Projectile diameters of 4 mm to 5 mm are envisaged.

At the rear is a compressed air valve with a large cross-section, which is indirectly controlled and opens quickly. The supply comes from a pressure vessel which is previously charged with an adjustable pressure.

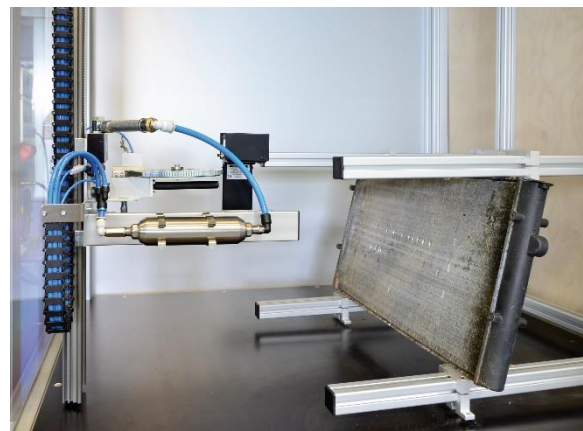


Fig. 1: Shooting device with compressed air connection,  
Example: Stone impact test on radiators

This arrangement ensures a high constancy of conditions over all shots of a test series. In order to prevent scattering caused by uneven contours of the pre-selected bullets, we recommend testing the use of geometrically exact bullets (e.g. roller bearing bullets) if necessary.



The bullets are fed through a specimen magazine which can be filled with up to 40 bullets. A bullet velocity meter is fixed at the front end of the barrel. With its help, the pressure can first be adjusted so that the desired velocity is achieved. This sets the test stand apart from conventional grit testers and allows the evaluation of defined impacts beyond the requirements of ASTM D 3170 or DIN EN ISO 20567-1.

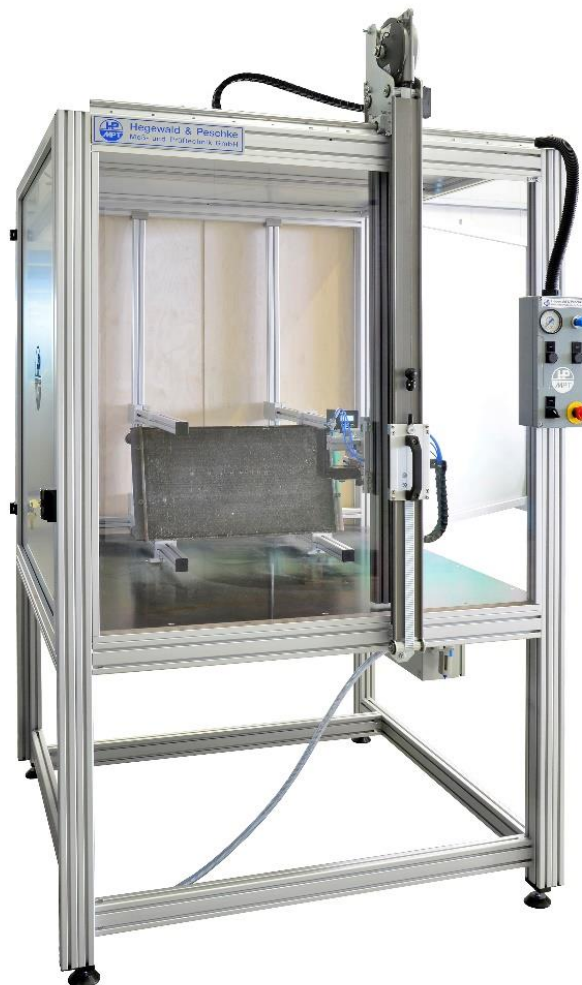


Fig. 2: Speedometer and specimen magazine

**Technical data:**

|  |  |
|--|--|
| <b>Max. specimen dimensions*</b>         | 1000 x 900 x 300 mm  |
| <b>Bullet velocity</b>                   | max. 140 km/h  |
| <b>Projectiles</b>                       | approximately spherical,<br>ø 4 - 5 mm                           |
| <b>Distance test piece / neck finish</b> | 150 to >600 [mm]<br>adjustable by specimen position              |
| <b>Muzzle inclination</b>                | 0° fixed   |
| <b>Inclination of test specimen</b>      | any around 1 or 2 axes,<br>depending on test specimen dimensions |
| <b>Dimensions (W x D x H)</b>            | ca. 1400 x 1400 x 2490 [mm]                                      |

\* other dimensions on request



Further application examples:

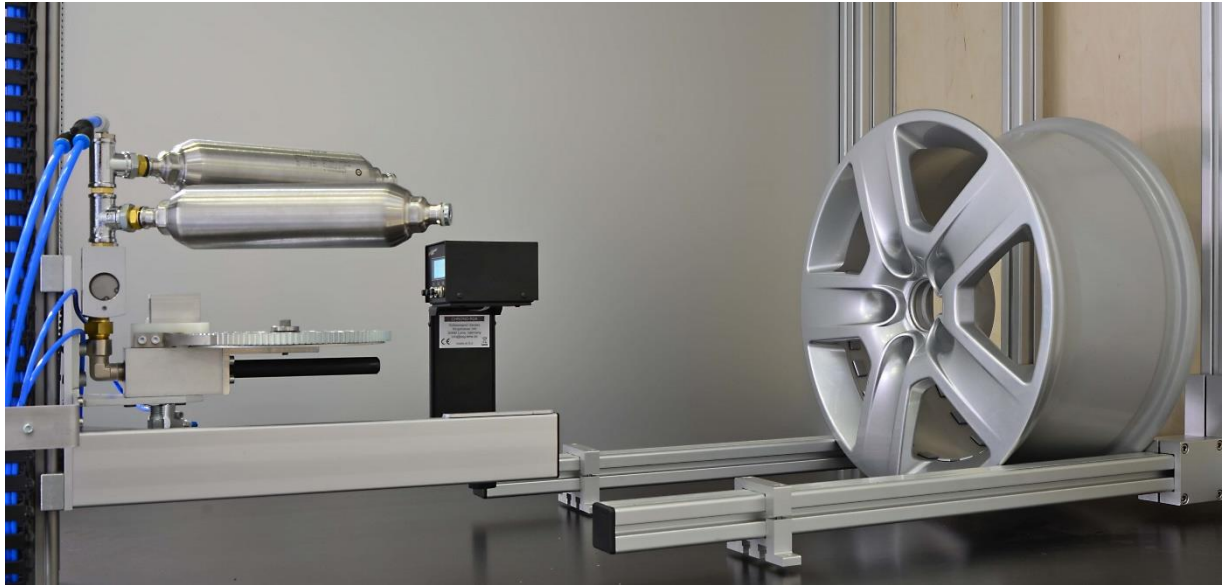


Fig. 3: Stone impact test on rims

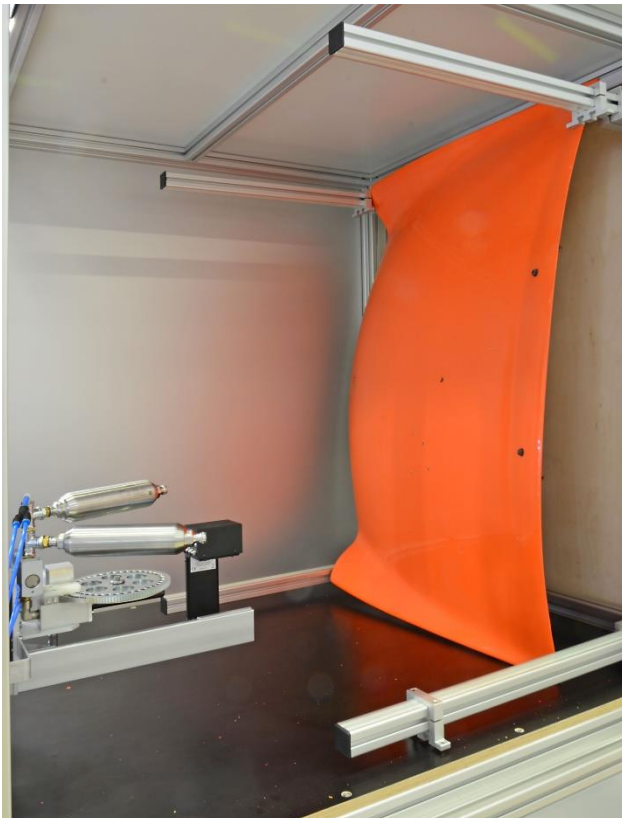


Fig. 4: Stone impact test on engine bonnets

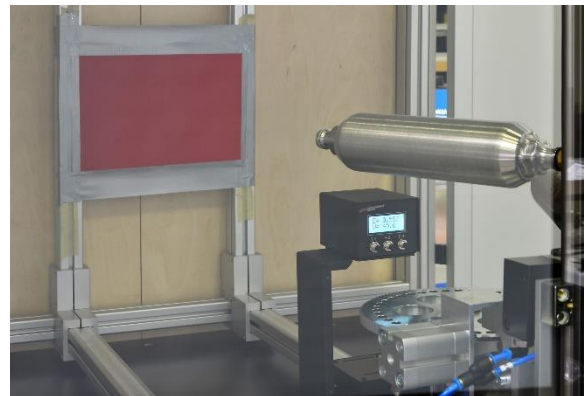


Fig. 5: Multi impact test on hail-resistant textiles for awnings

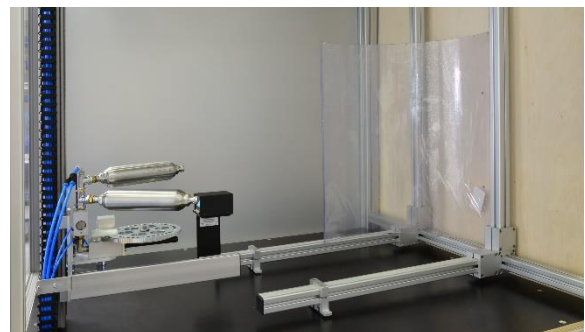


Fig. 6: Multi impact test on Plexiglas panes