Gravel Impact!

U.S. Patent No. 6,679,095

Test your material for chip & impact resistance to flying gravel.

Multi Test Gravelometer

New Multi-Test Gravelometer

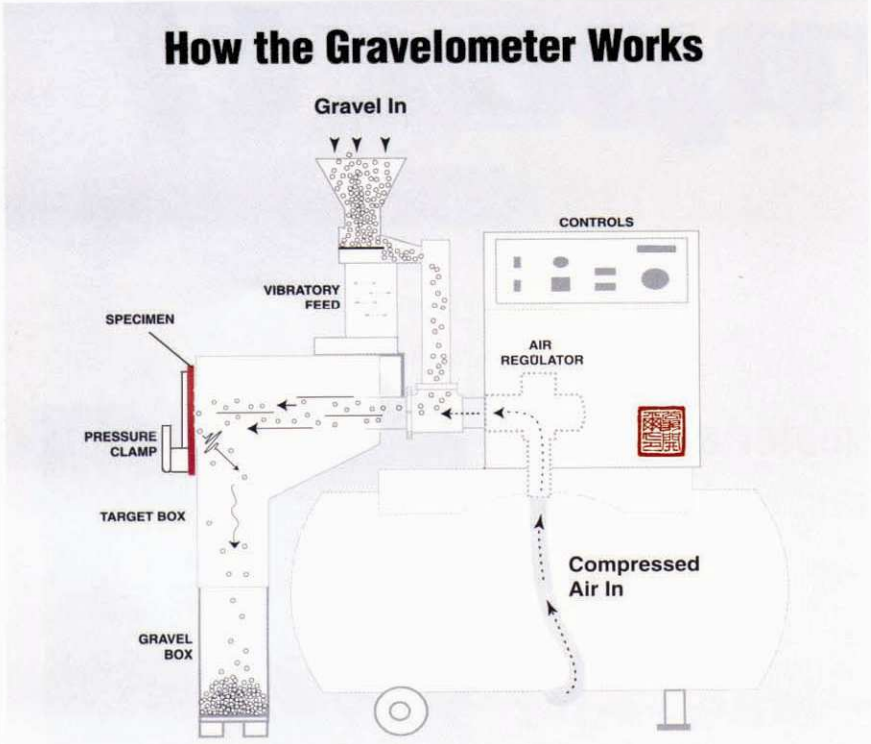
Runs American, German, Japanese & other Test Procedures

Easy to Use

More Reproducible Results

THE NEW GRAVELOMETER is designed for testing automotive materials and coatings for resistance to gravel impact. It complies with SAE, ASTM, VDA, GM, Ford, Chrysler, Mazda, JIS, Nissan, VW, and Toyota test specifications. The Multi-Test Gravelometer's modular Base Assembly and easy-to-switch components allow you to perform all major automotive chip tests with one tester. The modules include the Gun Assembly, Target Chamber and Specimen Holder. The new Gravelometer is designed to run hundreds of tests per day. It allows quick specimen loading/unloading and features an external gravel box for greater ease of use. The Gravelometer also incorporates enhanced control of test parameters and allows calibration for ISO 9000 compliance.

How the Gravelometer Works



A measured amount of gravel is vibrated out of a hopper and down a feed chute, where a vacuum exists due to the high velocity airflow below. The media is sucked down into the gun assembly and is fired at the test specimen by means of this air blast. After the media hits the target, it falls into the gravel box below.

Multi-Test Gravelometer runs American, German, Japanese & other Tests

The system can be varied by the choice of the following modules:

Gun Assembly for SAE
Gun Assembly for VDA
90° Target Chamber for SAE
90° Target Chamber for VDA
45° Target Chamber for SAE
54° Target Chamber for VDA
Flat Specimen Holder Assembly
3D Specimen Chamber

The Gun Assembly and Target Chamber can be changed to accommodate different test methods and different angles of impact. The Multi-Test Gravelometer can be changed from one configuration to another in less than 3 minutes.

The new design also allows you to use any type of shot media, including gravel, chilled iron grit (split shot), steel shot, and sand.

Easy to Use

The Gravelometer's rugged construction makes it easy to shoot hundreds of panels per day. The Flat Specimen Holder is located on the outside of the chamber for quick loading and unloading and high volume throughput. The Gravelometer also has an external feed hopper and an external gravel retrieval box for easy operation. A digital test counter keeps track of the number of tests that have been run. The Nozzle Pressure gauge indicates the air pressure in the gun assembly. A built-in Bubble Level and adjustable feet allow easy leveling.

Flexible Specimen Mounting

Flat test specimens are mounted at either 90° or 45° for different angles of impact. The Flat Specimen Holder is designed to accommodate a range of thicknesses. A three-dimensional (3D) Specimen Chamber is also available to accommodate larger objects like hubcaps, springs, and bumper sections.

More Precise

The new Multi-Test Gravelometer provides enhanced control of test variables.

- **Gravel Feed Rate** is adjusted via an electrically controlled vibratory feeder.
- **Air Pressure** and **Air Velocity** are kept constant because the built-in receiver tank stores and delivers air to the nozzle at a constant pressure and velocity to increase precision. The nozzle air pressure is adjusted to change the speed of the media hitting the test specimen.
- **Air Flow** variations are reduced by the use of machined Gun components which fit together precisely to eliminate variations in airflow.
- **Test Time** is programmable.

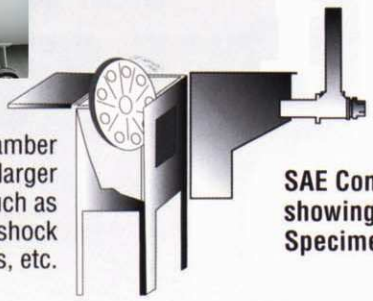
Quickly Switch Between SAE and VDA tests

SAE Configuration with 90° Specimen Mounting

The gun assembly and target chamber can be changed in minutes to accommodate different test methods and angles of impact.

VDA Configuration with 54° Specimen Mounting

3D Chamber accommodates larger samples such as hubcaps, shock absorbers, etc.



SAE Configuration showing 3D Specimen Chamber

Safety

The Multi-Test Gravelometer is equipped with safety cut-off switches that automatically shut down the machine if either the target plate or specimen holder is opened or the target box is removed. The safety relief valve on the air receiver tank automatically keeps the pressure in the tank below a certain level.

Calibration for ISO 9000 compliance is easy with our Calibration Kit.

Easy Maintenance

All components of the Multi-Test Gravelometer are positioned to allow easy access for inspection, maintenance and calibration. An easy-to-clean air filter controls the dust that is generated from the breaking of gravel or other media.

Compact

The modular design of the Multi-Test Gravelometer allows you to save lab space. You no longer need to keep a different type of tester for each and every test that you are required to run.

Realistic for Testing Automotive Materials

The Gravelometer was designed by an SAE committee comprised of major automotive manufacturers and suppliers. For over 30 years, it has been used to accurately reproduce the damage caused by flying gravel.

The Multi-Test Gravelometer is designed to test the following:

Cohesional failure of topcoats

Adhesion failures of different layers of a coating system

Brittleness of hard glassy materials

Optimum film thickness for chip resistance

Chipping, impact & abrasion resistance of plastics and glass.

Applicable Test Standards

The Multi-Test Gravelometer complies with test procedures from the following organizations.

Society of Automotive Engineers (SAE)

American Society for Testing and Materials (ASTM)

Verband Der Automobilindustrie (VDA)

Japanese Industrial Standard (JIS)

General Motors

Chrysler

Volkswagen

Ford Motor

Toyota

Mazda

Nissan

Lock in Specimen

Pour Gravel

Start Test