



**Thickness measurement on automobile paint coating  
(application example)**

**Application Range**

If the high accuracy of electronic coating thickness measuring instruments is not necessary, the question about a simple and economical alternative sets itself up again and again.

For these cases of application the coating thickness gauge "LEPTO-Pen" is the best choice.

The LEPTO-Pen works on untempered commercial quality steel substrate according to the known magnetic attraction principle (EN ISO 2178).

It is composed of a precision magnet and a mechanical spring balance, the scale of which is calibrated and labelled in  $\mu\text{m}$  coating thickness.

The handling of the gauge is correspondingly easy.

**Mode of Action**

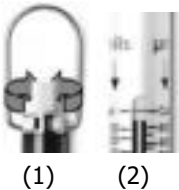
The magnetic attraction of a magnet to coated ferromagnetic material is a measure for the coating thickness. The LEPTO-Pen measures the adhesive force of the built-in high-grade magnet according to the measurement principle of a spring balance. When lifting the LEPTO-Pen off the specimen, the built-in precision spring is elongated until the magnet snaps off of the specimen. The elongation of the spring immediately before detaching of the magnet corresponds to the attraction force and thus to the coating thickness. The elongation of the spring can be read off a scale, which shows in  $\mu\text{m}$  and mils coating thickness.

**Measuring Range and Tolerance**

Model **2091.001**: scale 0 to 800  $\mu\text{m}$  / 0 to 30 mils. Measuring range: 10 to 500  $\mu\text{m}$  / 0.25 to 20 mils. Measurement uncertainty within the measuring range: +/- 10% +/- 3  $\mu\text{m}$ .

Model **2091.002**: scale 10 to 1000  $\mu\text{m}$  / 0.5 to 40 mils. Measuring range: 20 to 750  $\mu\text{m}$  / 0.75 to 30 mils. Measurement uncertainty within the measuring range : +/- 10% +/- 3  $\mu\text{m}$ .

The stated values are valid for planar steel from St 52-3 (1.0570) with a thickness of 1 mm min. Similar values are applicable for most untempered steel grades.



**Speciality**

The LEPTO-Pen is applicable for measurement in virtually every position (e.g. horizontally or vertically with magnet to the top – "overhead measuring").  
With coating gauges, which operate according to the attraction principle, the working range of the spring is shifted slightly depending on its orientation due to the own weight of the magnet. The LEPTO-Pen compensates for this effect by means of the adjusting screw (1) and a calibration mark on the scale (2).



**Measuring**

The surface to be measured must be free from dust, oil or other pollution.

- ▶ Place the LEPTO-Pen perpendicular to the surface so the magnet sticks to the surface.
- ▶ Then pull the LEPTO-Pen slowly and with calm hand perpendicularly from the surface and watch the scale deflection.
- ▶ The scale deflection value immediately before detaching of the magnet corresponds to the coating thickness to be measured.

**Technical Data**

Measuring range, tolerance: see above	Working temperature: 0°C to 40°C	Permissible relative humidity: < 80 %
	Storage temperature: -20°C to 50°C	Working life: 500.000 meas. cycles min.

**Scope of Delivery**

All LEPTO-Pens come in a convenient plastics case with operating manual and individual acceptance report.