

Peripherals Regula 7516



The product is intended for express inspection, court expertise, diagnostic tests and forensic examination of metal surface with the purpose of authenticity verification and detection of vehicle identification numbers falsifications.

Regula 7516 is a portable complex in a protective case. It comprises a magnetic powder visualizer, an electrochemical etcher, an eddy-current detector, auxiliaries and consumables, an optical probe with an oblique light source.

The complex can be used either as a separate device for non-/destructive examination of metal surface, or together with [Regula 7505M](#) expanding functionality of the latter.

Functionality

- 1. The visualizer is intended for visualization of structural and relief inhomogeneity of material (e.g. internal stress zones, zones of local thermal effects, ferromagnetic materials, welded joints, surface defects) without removing varnish-and-paint coating.**
 - Excitation of magnetic stray fields above the object surface. The magnetic stray fields display internal structural inhomogeneity of the material.
 - Magnetic powder visualization of magnetic stray fields of the object.
- 2. Eddy-current detector — a remote eddy-current sensor and a measuring indicator.** The detector is intended for indication of structural inhomogeneity of material (welded joints, alterations of metal thickness, the layer of varnish-and-paint coating and zones of local thermal effects) without removing varnish-and-paint coating.
 - Excitation of the electromagnetic field of eddy currents in the examined area of the object. The eddy currents display internal structural inhomogeneity of the material and the object geometrics.
 - Indication of interaction parameters between the electromagnetic field of eddy currents and the electromagnetic excitation field.
- 3. Electrochemical etcher — a remote galvanic head of etching with a current regulator and a voltage inverter.** The etcher is intended for visualization of structural inhomogeneity of material (e.g. internal stress zones, zones of local thermal effects, welded joints) removing varnish-and-paint coating.
 - Removal of varnish-and-paint coating.
 - Electrochemical etching of the surface of metallic templates made of steel, cast iron and aluminum alloys.
 - Filling, etching and maintaining the galvanic head without the operator's contact with the electrolyte.
- 4. Optical probe with an oblique light source (a torch).** The probe construction is based on the CMOS camera and is equipped with a flexible stand with magnetic holders. The optical probe is used for the visual-optical examination of front and back surfaces of the vehicles data carriers and also for inputting the images obtained as a result of visualization by the methods of magnetic-powder examination and electrochemical etching.
 - Illumination of the examined object.
 - Examined object image capture and transformation of the image into a TV signal.
 - Forming a TV image on a PC monitor.
 - Saving examination results.
- 5. Case** for storing and transportation of the peripherals.

Application

- Court expertise
- Forensic departments
- Customs authorities
- Law-enforcement agencies
- Car rental and leasing companies
- Auto service centers

Optical probe with an oblique light source

- Field of view, mm — 50×60 (when the height is 50 mm)
- Video camera frame size, pixels — 1600×1200
- Dimensions (length×width×height), mm, max:
 - **oblique light source** — 270×30×30
 - **optical probe** — 340×30×30
- Weight, kg, max:
 - **oblique light source** — 0,16
 - **optical probe** — 0,22
- Power supply:
 - **oblique light source** — from a battery of the torch
 - **optical probe** — from a USB port:
 - power supply voltage, V — 5
 - power consumption, W — 2,5

Magnetic powder visualizer

- Size of the visualization area, mm, max — 160×20
- Dimensions of the remote magnetizer (length×width×height when packed), mm, max — 125×80×30
- Weight, kg — 0,8

Eddy-current detector

- Maximal gap between the sensor and metallic surface of the template, mm, max — 1
- Speed of the sensor movement along the examined surface, m/s, max — 0,1
- Warming-up time, min, max — 5
- Dimensions, mm, max:
 - electronic block (length×width×height) — 175×85×30
 - remote sensor (length×diameter) — 45×18
- Weight, kg — 0,3
- Power supply voltage (from the internal battery), V — 9

Electrochemical etcher

- Range of electrolysis regulated current, A — 0-2,5
- Time of non-stop etching without refilling (2,5 A current), minutes, min — 8
- Remote galvanic head:
 - dimensions, mm — 120×30
 - weight, kg, max — 0,2
- Power supply:
 - rechargeable battery
 - vehicle accumulator:
 - power supply voltage, V — 12
 - power consumption, W, max — 24

Case

- Dimensions (length×width×height), mm, max — 460×360×140
- Weight, kg, max — 7



Optical image in oblique light



Magnetic powder visualization



The result of Electro-chemical etching