

Precious Metal Testing Set - ATS 300 MW

The precious metal testing set Aurotest - ATS 300 MW (magnetic balance) is a non-destructive, fast and easy to use authenticity analysis system for investment gold coins and bars of common sizes and weights from ca. 20 g up to 250 g fineness and above (max. 1000 g), even when packaged in thick plastic blisters or capsules. But also the analysis of bars and coins made of fine silver, fine platinum and fine palladium is possible with this testing set.



Magnetic balance ATS 300 MW during the test of a thick blister packaged, authentic 100 g Perth Mint Kangaroo gold bar

The ATS 300 MW utilizes the determination of the special diamagnetic properties of gold and silver in comparison to typical counterfeit materials like tungsten, molybdenum, tantalum, hafnium and rhenium as well as their alloys with each other, which show all paramagnetic behaviour in strong magnetic fields. Such fake materials will be simply dragged into magnetic fields. Therefore, the presence of these metals exert a measurable attractive force into the upper direction of the balance which creates a negative sign for the difference weight in clear contrast to authentic fine gold or silver parts. Also hidden paramagnetic metal cores in precious metal bars or fake coins with thinner or thicker coatings of gold and silver can be found in this way. The employed strong magnetic fields can not be shielded such as X-Rays by heavy fake or genuine metallic materials. In refined investment grade gold or silver the ferromagnetic iron or nickel should not be present beside very small trace amounts.

Just a 5% content of paramagnetic metals inside a gold or silver coin and bar can be detected due to the stronger para-

magnetism of tungsten or molybdenum beside common ferromagnetic nickel layers below gold or silver linings many times used in fakes to imitate precious metals. The magnetic testing is based on a thorough volume inspection of the precious metal objects and not only on the analysis of a thin surface layer. There is no need any more to send coins or bars to an assayer or refiner for authenticity testing. With the ATS 300 MW you can check by yourself the authenticity of the precious metal samples within seconds by comparison tests with original ones - even for bars and coins made of the paramagnetic investment metals platinum and palladium - and distinguish them from possible fakes.

For the private investor the ATS 300 MW makes an end on any doubts about possible fakes in his existing precious metals portfolio, even when the bars or coins are contained in closed plastic blisters or capsules. But also during the acquisition or sales process by the private investor or the precious metal dealer this testing set offers the capability to check the genuineness of investment bars and coins in a very short time. All imitates can be detected and excluded from dealing. The price of the testing set is very favorable in relation to the incurred financial loss by a single counterfeited gold bar or 1 oz gold coin when initially undetected.

The testing set AuroTest ATS 300 MW (magnetic balance) consists of:

- a robust precision balance with a weighing range of max. 350 g and resolution of ± 0.001 g (1 mg) together with an AC power supply with an input voltage range of 100..240 VAC (can also be powered with 9V alkaline battery type 6LR61 resp. E-block 9V for mobile use)
- a glass window frame with four mounted glass windows, suitable as top part together with a metallic cover plate for the glass frame, shape fitted to measure bars and coins between 20 g (min. 7 g possible) and up to 250 g (max. 1000 g possible), designed for optimum penetration of the magnetic field into the samples
- a mountable, cylindrical rare earth magnet, with a surface field strength (magnetic induction) of ca. 1.5 Tesla*)
- a thin, laminated, transparent cover foil, only used for holding coins and bars smaller than 30 mm diameter/transverse dimension in the weighing range from 7 g to 1 oz (31.1 g) above the magnet by covering the measuring hole in the metallic cover plate
- accessories for the decoupling of the measuring magnetic field from the balance electronics
- a set of comparison reference tables for the magnetic properties and density values of common investment gold bars and coins, as well as of fine silver, platinum, palladium bars and coins as well as typical counterfeit materials
- a 1 oz. tungsten coin as a reference object in comparison to gold coins or gold bars
- an illustrated user's manual about the installation and handling of the magnetic balance and the accomplishment of comparison tests
- a lockable aluminum transportation case, dimensions 34x29x14 cm (LxWxH)
- optional accessories: Pyknometer set I: two small stainless steel pyknometers (K0 & K00) for the density determination up to ca. 50 g; Pyknometer set II: two stainless steel pyknometers (K1 & K2 for gold or K3 for silver for the density determination from 100 g and up to 250 g; ATS 300 MW Density kit III: fast precision buoyancy density determination kit for samples from 1 g to 200 g, recommended particularly for small coins and bars up to 2 oz.

*) see also the accompanying safety instructions for the necessary precautions when handling strong magnets

Technical data of the ATS 300 MW testing set:

Measuring range weight:	1 to 350 g, resolution ± 0.001 g (1 mg); recommended precious metal weight to be tested: 10 g to 250 g (max. 1000 g)
Measuring range density:	1.00 to 22.57 g/cm ³ , precision: typical 0.5 % (only possible with optional pyknometer set I/II)
Measurable fine metals:	Fine gold and investment gold (coin) alloys, Fine silver and investment silver alloys, fine platinum and fine palladium
Following materials can be distinguished against compact precious metals:	tungsten and tungsten alloys, tantalum, hafnium, molybdenum, rhenium, uranium, titanium, brass (tombac), bronze, red brass, copper, lead, zinc, tin, nickel, iron/steel, titanium, aluminum, and many others including gold layers and thicker gold platings on these materials

AuroTest

Petra & Torsten Holz GbR
Logauweg 4
D-70565 Stuttgart/Germany
Phone: +49-711-715 6455
Mobile: +49-179-208 3223
Telefax: +49-711-715 6906
Web site: www.aurotest.de
Email: sales@eurotest.de

Your local sales representative: