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1. How does the PMV PRO work? Can the Precious Metal Verifier PRO read through plastic bags, cases, and slabs?

The PMV PRO measures a coin or metal bar that is placed between two sensors. A signal measures the surface of the sample and then sends another signal completely through the sample. The signal passing through the sample is detected on the other side. In this way, we can measure the resistivity (or conductivity) of the metal. Using the two sensors we can also determine the thickness of the sample.

The PMV PRO signal sees plastic as being invisible and therefore the plastic has no effect on the reading.

2. How do I use the PMV PRO?

We have made several videos to show you how to use this instrument. Before using the PMV PRO it's best to watch the Introduction video. Go to the Instructions tab on this website and select the dropdown box labeled PMV PRO Videos. Select the first video, Introduction, and this along with the manual will help you get started in verifying your precious metal items.

3. What is the difference between the two bars on the display? What does the number next to the displayed image mean?

The top bar measures just the surface of the bar a fraction of a mm deep. Even so, this is deep enough to look under hundreds of plating thicknesses. The bottom bar is the thru measurement that goes completely through the sample and can detect any deeply buried counterfeit metals. The number on the display is the characteristic resistance (resistivity) in micro-ohm cm. This number can be found on Wikipedia and other web sites for base metals. Using the setup screen on the unit we can change the display to show the number in a different manner, characteristic conductance (conductivity), in micro-Siemens per cm.

4. Why are so many of my silver items measuring in the yellow (some see this as orange) range? What does it mean when an item is in this zone?

The yellow zone does not mean that there is anything wrong with the bar. You should always check the density of the bar. If the density reading (see FAQ 5) is correct, then the sample is consistent with the correct metal. Readings in the yellow zone that have the correct sizing are consistent with the metal being tested. Silver rated .9999 will measure in the green zone. Silver rated .999 will most often measure in the yellow zone. Pure copper will read in the yellow zone when the metal type silver is selected, but copper coins will be shown as being too large when the size of the sample is checked.

5. How can the PMV PRO measure the density of the bar?

The user selects the metal type and enters the weight of the sample. With the sample under the sensor, the user presses the button labeled measure. Select round or rectangular for the sample type. An image will appear on the display to match what the diameter,

or rectangular shape should be. For rectangular samples, the width of the image must be adjusted to match the width of the bar. You can make this adjustment by using the up and down arrows. If the sample does not match this defined shape displayed on the screen, then it must be an incorrect density.

6. Why is my fake gold coin reading in the green range?

There are other metals that have the same resistivity as gold. These are generally a copper alloy. They will read correctly on the surface and thru reading scales; however, their density is about half that of gold. When checked against the expected size of the sample these items will be much larger than expected and it will be clearly shown that the sample is not made of gold.

7. Can the Precious Metal Verifier be used with jewelry?

The Precious Metal Verifier PRO does not work well with jewelry for two reasons. First, we need to know the specific alloy we are measuring and then determine if the item being tested falls into the range of that alloy. Jewelry alloys vary considerably. What is specified as 14K gold might be that, but it might just as well be 13K gold; the remaining metal might all be copper, but it might just as well be some silver and some copper, or some other combination. Each different combination would have its own resistivity range. The number of variations is too great for us to work with.

The second problem with jewelry is that we need a flat area of metal that can be completely covered by a sensor. Jewelry is often curved, woven, and/or ornate in a fashion that makes it so we cannot get an accurate reading on it. Also, necklaces, rings, and earrings are usually too small for even our small sensor to get an accurate reading. Customers have had success looking at sterling silver flatware that often matches up with the sterling silver range on the Verifier, but there are also pieces that we just cannot measure.

8. How do I get the weight of the sample?

The PMV PRO is not a scale. You must use your own scale to check the actual weight of the sample.

9. How do I recharge the battery?

The battery is a standard lithium-ion battery, just like that found in a mobile phone. You can use the charger and cable that come with the unit. You can also charge the unit from another mobile phone charger, the USB connector from a computer, the USB connector in your car, or the USB connection on a power outlet.

10. How do I know which sensor to use?

The large sensor on the unit can measure samples that are between 1.5 to 12.5 mm thick (2.5 mm minimum for platinum, palladium and gold alloys), and at least 32 mm in width or diameter. The small sensor is used for samples that are between .6 mm to 3.5 mm thick, and as least 15 mm in width or diameter.

Items thicker than 12.5 mm will need to use the Refiners wand and cannot make the thru measurement, only the standard surface measurement. The Refiners wand will detect tungsten under the surface of gold at a depth of 2.5 mm on each side of the sample.

Items too small for the small sensor can be measured using the Small wand which can measure items as thin as .4 mm in gold or silver, and .6 mm for platinum, palladium, and gold alloys. it has a sensor spot size of 8 mm.

11. Do I need to recalibrate the Precious Metal Verifier? What maintenance is needed?

The unit is calibrated by pressing the button labeled **Cal** whenever the metal is changed, when the unit is turned on, or on command by the user. NOTE: remove the sample from the sensor to calibrate!

The distance between the sensors will need to be periodically recalibrated. The Cal Disk in the holder underneath the unit is used for this purpose. Hold down the Cal button for 3 seconds then place the Cal disk under the large sensor and press the enter button (button in the middle of the arrow buttons). Repeat this process for the small sensor. Also, to make sure that your machine is measuring correctly, check the readings for the Cal disk by selecting Calibrator at the metal. If these are not correct, then contact Sigma Metalytics and we will help you out with a recalibration if it is needed.

The unit only needs periodic charging to keep running, there is nothing else needed for measurements. If you have wands with your unit, then the part of the wands that plugs into the unit needs to be kept clean. It is useful to periodically clean the plugs with isopropyl alcohol.

12. Is the Precious Metal Verifier safe to use?

Yes, the Precious Metal Verifier uses very low power, low energy signals; and is no more dangerous than sitting next to an AM radio.

13. Why are there two scales for Rhodium?

Two companies that sell rhodium bars are Baird and PAMP. The Baird bars are a standard type whereas the PAMP process appears to use foamed metal. They are equally valuable for the same weight, but the PAMP bars are less dense than the Baird. The PAMP bars therefore have a different electrical reading than is usually specified for Rhodium, so we have added a range to accommodate the foamed material.

