

A Journey to Purchase a Metal Detect

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When choosing a metal detector, you should give special consideration to its operation frequency, since this is exactly the parameter that influences what you find and how deep. Modern metal detectors can work using either one frequency with an option to shift it or several operation frequencies, or it can be a multi-frequency metal detector. So, the question is which frequency to choose?

Metal detectors operation is based upon the science of [electromagnetism](#) – the device “captures” metal objects by means of electromagnetic waves produced by the MD itself and informs its user about the target found.

At that the distance to the target varies greatly depending on the medium where the latter is. For example, while testing the MD it detects a coin at 12 inches distance if it is outside, but in the ground the detection depth can be significantly smaller. Keep in mind that other conditions can influence this parameter as well. The level of ground mineralization, target location, presence of corrosion and other factors effect MD detection depth drastically.

MD frequencies are divided as follows:

- 2-2,5 kHz — low frequency
- 6-12 kHz — medium frequency
- 15-22 kHz — high frequency
- from 30 kHz and higher — super high frequency

Things are quite simple as for what exactly the MD frequency value means – a low frequency [metal detector](#) “sees” deeper, but it’s not good at identifying small targets. As for high frequencies – they are perfect for spotting small things – coins, jewelry etc. However, it is true only if they aren’t located too deep.

So, how to make a metal detector a multi-purpose and a single frequency one? The manufacturers produce different variations of metal detectors. Multi-purpose detectors with 7-8 kHz operation frequency are rather moderately priced (however of decent quality). This is the frequency that most of MD for beginners are using. They do quite well with searching both small stuff like coins and larger objects.

Thus, Garrett Ace 250 metal detector can find coins 7-10 inches deep at 8.25 kHz operation frequency and a helmet 30 inches deep, as for large metal objects (a tank or a car) – these can be detected at about 1.5 meters under ground. That’s why this device is considered a multi-purpose one.

[High frequency](#) metal detectors are widely used for gold prospecting. Nuggets and grains of gold are small sized, in most cases they are almost sand like. The higher the frequency is, the higher is the device sensitivity to the tiniest objects. You can also use a multi-purpose metal detector if your aim is to find gold. Therefore, you should choose a high frequency or a multi-frequency MD in this case.

Having several operation frequencies allows using all the device abilities. These are deep search metal detecting and precise finding of small objects – you shouldn't even bother about missing some valuable targets when using such an MD. However, occasionally these metal detectors are rather high priced and used for professional treasure hunting. Multi-frequency metal detectors can function in a range from the lowest frequency 1,5 kHz to the highest one 100 kHz and the number of frequencies equals 28!

As for the multi-frequency MD model drawbacks, I can name just slow processing speed of incoming information. That's why the results may be rather poor when you go metal detecting on littered with old iron sites. There are also MDs with an option of operation frequency shifting as well as the devices in which you can change the frequency by changing their coil.

When selecting a metal detector evaluate your capabilities and intentions properly – if you are a beginner in treasure hunting it's better to buy an MD with a multi-purpose frequency. Such a device will allow treasure hunting around post-war sites, searching for coins and jewelry. You have a serious aim to find some nuggets? So, you should definitely buy a high-frequency detector.

If you are an experienced treasure hunter and you know all about metal detecting basics you can surely get a multi-frequency MD. Everything depends on search conditions and aims as well as on the amount of money you are ready to spend on such a pricey device.