

# KNOWLEDGE BASE ARTICLE

## Coil Selection Guide

Minelab manufactures a range of accessory search coils to suit different detecting requirements and conditions. The following chart will assist you to select the right search coil for the right job. Whether you're hunting for coins in shallow water at the beach or searching for large deep nuggets, Minelab has the search coil to suit.

### Coil Selection Guide









Image	Description	Compatible detectors	Water protection	Application
	18-inch Round Commander Monoloop Coil	GPX Series GP Series SD Series	Water resistant	The 18-inch Monoloop coil detects to the greatest depth of all the Commander Coils. It is not sensitive to very small gold nuggets, but has great ground coverage and finds very deep gold.
	18-inch Round Commander Double-D Coil	GPX Series GP Series SD Series	Water resistant	The 18-inch Double-D achieves greater depth and ground coverage but is less sensitive to small gold compared to the other Double-D coils.
	15-inch x 12-inch Semi-Elliptical Commander Monoloop Coil	GPX Series GP Series SD Series	Water resistant	The 15 x 12-inch Monoloop coil is quite sensitive to small gold nuggets, has greater depth on larger gold and has better ground coverage than smaller coils.  (Standard with GPX-4500 Only)
	15-inch x 12-inch Semi-Elliptical Commander Double-D Coil	GPX Series GP Series SD Series	Water resistant	The 15 x 12-inch Double-D achieves good depth and ground coverage but is not quite as sensitive to very small gold compared to the 11-inch Double-D.
	11-inch Round Commander Monoloop Coil	GPX Series GP Series SD Series	Water resistant	The 11-inch Monoloop coil is very sensitive to small gold nuggets, and has good depth on larger gold. (Standard with GPX 5000 Only)
	11-inch Round Commander Double-D Coil	GPX Series GP Series SD Series	Water resistant	The 11-inch Double-D is a good combination of depth and sensitivity to small gold with reduced false signals. A great coil to start with.  (Standard with all GPX Models)
	10-inch x 5-inch Elliptical Commander Double-D Coil	GPX Series GP Series SD Series	Water resistant	The 10 x 5-inch Double-D has good depth and sensitivity to small gold and is very manoeuvrable.
	8-inch Round Commander Monoloop Coil	GPX Series GP Series SD Series	Water resistant	The most sensitive of the Commander Coils, to small gold, the 8-inch round provides the best depth on sub gram nuggets in light to moderately mineralised soils. A popular coil for use on old diggings, it is also a great coil for detecting in heavy vegetation.








Image	Description	Compatible detectors	Water protection	Application
	11-inch Round Double-D GoldSearch Coil (GoldSearch-1100)	Eureka Gold Gold Striker XT Series	Water resistant	Great depth and ground coverage for medium to large gold.
	10 x 5-inch Elliptical Double-D Easy-sweep GoldSearch Coil (Goldsearch-1000)	Eureka Gold Gold Striker XT Series	Water resistant	The standard coil supplied with the Eureka Gold. This coil has great sensitivity, good ground coverage and is easily manoeuvrable in rough terrain.
	8-inch Double-D Goldsearch coil (Goldsearch 800)	Eureka Gold Gold Striker XT Series	Water resistant	Excellent for detecting sub-gram gold. This coil is lightweight and highly manoeuvrable for getting in tight spots.
	11-inch FBS Coil	E-TRAC Safari Explorer Series Quattro	Waterproof	The standard coil supplied the E-TRAC and Safari. It is robust yet lightweight, offers great depth, sensitivity and excellent target separation.
	8-inch FBS Coil (FBS-800) (includes carbon fibre lower shaft)	E-TRAC Safari Explorer Series Quattro	Waterproof	Excellent target separation, lightweight and highly manoeuvrable, also more sensitive to smaller targets than the 11-inch FBS coil.
	8-inch Tornado Coil (Tornado 800)	Sovereign Series	Waterproof	Excellent target separation, lightweight and highly manoeuvrable, also more sensitive to smaller targets than the 10-inch Tornado 1000 coil.
	10-inch Tornado Coil (Tornado 1000)	Sovereign Series	Waterproof	The standard coil supplied with the Sovereign GT. It is lightweight, offers great depth & sensitivity and is perfect for all terrains.

Image	Description	Compatible detectors	Water protection	Application
	6-inch Concentric 7.5 kHz Coil	X-TERRA Series	Waterproof	Excellent target separation and pinpointing accuracy with high sensitivity to small targets.
	6-inch Double-D 18.75 kHz Coil	X-TERRA 50, 70, 305, 505 and 705	Waterproof	Exceptional sensitivity to small targets with good target separation and pinpointing accuracy.
	9-inch Concentric 7.5 kHz Coil	X-TERRA Series	Waterproof	The standard coil supplied with the X-TERRA 305, 505 and 705. Good depth, target separation and pinpointing accuracy.
	9-inch Concentric 18.75 kHz Coil	X-TERRA 50, 70, 305, 505 and 705	Waterproof	Good depth, target separation and pinpointing accuracy. Has similar properties as the 7.5 kHz version, with greater sensitivity to small targets.
	9-inch Concentric 3 kHz Coil	X-TERRA 70, 505 and 705	Waterproof	Good depth, target separation and pinpointing accuracy. Has similar properties as the 7.5 kHz version, with greater sensitivity to large deep targets.
	10-inch x 5-inch Double-D 18.75 kHz Coil	X-TERRA 50, 70, 305, 505 and 705	Water resistant	The standard coil supplied with the X-TERRA 705 Gold Pack. Has exceptional sensitivity to small targets in mineralised ground with good ground coverage.
	10-inch Round Double-D 7.5 kHz Coil	All X-TERRA Series	Water resistant	Excellent ground coverage and good depth even in mineralised ground.
	10-inch Round Double-D 18.75 kHz Coil	X-TERRA 50, 70, 305, 505 and 705	Water resistant	Exceptional sensitivity to small targets in mineralised ground with excellent ground coverage and good target separation

Image	Description	Compatible detectors	Water protection	Application
	All Terrain 15-inch Double-D 3 kHz Coil	X-TERRA 70, 505 and 705	Waterproof	Exceptional ground coverage and depth.
	All Terrain 15-inch Double-D 7.5 kHz Coil	X-TERRA Series	Waterproof	Improved depth and ground coverage across a wide range of target sizes.
	All Terrain 15-inch Double-D 18.75 kHz Coil	X-TERRA 50, 70, 305, 505 and 705	Waterproof	Provides great ground coverage while being very sensitive to small targets. This coil is a great choice for gold prospecting.
	Digger 6-inch Double-D 3 kHz Coil by Coiltek Manufacturing	X-TERRA 70, 505 and 705	Water resistant	Excellent target separation and stability and is ideal for detecting in trashy areas.
	CTX 06 6-inch Double-D FBS Smart Coil	CTX 3030	Waterproof	Very sensitive to small targets, and perfect for finding treasure in high trash areas. It is also ideal for manoeuvring in difficult terrain.
	CTX 11 11-inch Double-D FBS Smart Coil	CTX 3030	Waterproof	The standard coil supplied with the CTX 3030. It is robust yet lightweight, offers great depth, sensitivity and excellent target separation.
	CTX 17 17-inch x 13-inch Double-D FBS Smart Coil	CTX 3030	Waterproof	Provides maximum depth for specialised treasure hunting. It is also great for wide ground coverage in open spaces.

Water resistant: May be splashed, washed, used in drizzling rain, or moved through wet grass. Must not be submersed under water.

Waterproof: Submersible to 1 meter. Ideal for shallow water wading and gold prospecting in shallow streams.

## Coil Selection Basics

When choosing a coil there are a few basics to remember that relate to the size, shape, configuration and frequency (X-TERRA Series) of the coil.

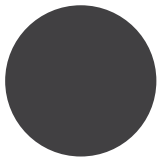
### Coil Size

The size of a coil can influence the detection depth and sensitivity of a detector. The larger the coil, the deeper it tends to detect, but with less sensitivity to small targets. The smaller the diameter, the more sensitive it becomes, but with reduced detection depth.

Smaller coils are lighter in weight, easier to control and may be chosen for their ability to negotiate difficult terrain or undergrowth. Smaller coils also have a target separation advantage in areas of high trash, due to their smaller detection footprint.

### Coil Shape

The most common coil shapes are round and elliptical. They are available in solid and open-web designs. Elliptical coils are more manoeuvrable without sacrificing ground coverage. Round coils are often more stable, higher performing, and achieve greater depth. Open-web coils are waterproof, help cut through water and assist when pinpointing because the ground is visible through the coil.



Round coil



Elliptical coil



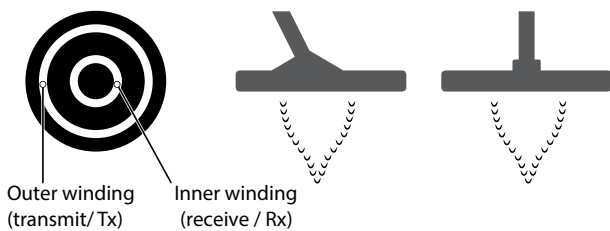
Open-web coil

### Coil Configuration

The difference between configurations is the shape of the wire winding within the coil housing. The four most common types are Concentric, Double-D, Monoloop and DOD.

#### Concentric Coil

A Concentric coil has an inner circle and an outer circle wire winding. The search pattern is cone shaped and can be useful for accurately pinpointing targets. Concentric coils require more sweep overlap for thorough ground coverage. They are also noisier in highly mineralised ground and therefore might not be the best choice for gold prospecting.

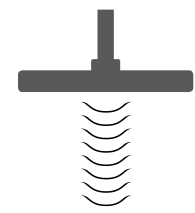
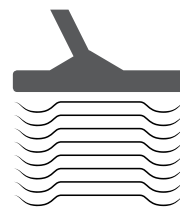
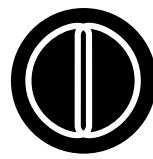


#### Double-D (DD)

A Double-D coil has two overlapping wire windings in the shape of two D's. The benefits of a Double-D coil are stability (especially in heavily mineralised ground), good depth, sensitivity and a very thorough search pattern requiring less overlap.

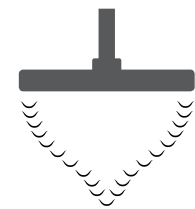
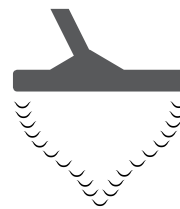
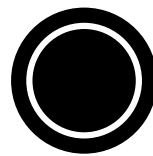
When used with GPX detectors, Double-D coils (unlike Monoloop coils) are able to discriminate between ferrous and non-ferrous targets when Iron Reject is activated. They are also more stable when used on wet salt beach sand and in electrically noisy environments.

When used with X-TERRA detectors, Double-D coils perform quieter than Concentric coils in mineralised ground and are therefore well suited for gold prospecting.



#### Monoloop Coil

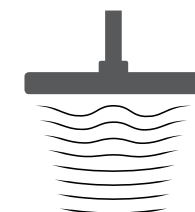
Monoloop coils are a specific configuration of coil for Pulse Induction technology detectors (GPX Series). These coils have one winding of wire around the circumference of the coil, which is used to both transmit and receive. The signal pattern of the Monoloop coil is cone shaped, requiring more overlapping. In extremely heavily mineralised grounds they can be more difficult to ground balance, however they tend to achieve greater depth and are more sensitive than Double-D coils.



#### Super-D Coil (GPZ 7000 detectors)

The Super-D coil consists of one middle transmit winding and two outer receive windings which essentially form the equivalent of 2 symmetric Double-D coils, one on the left and one on the right. This Super-D configuration means that targets close to the coils surface produce a double response as the coil is swept over the target, the same response for each Double-D half. With targets further from the coils surface, the coil behaves more like a traditional coil, with the peak sound response occurring directly below the coil's central axis.

Super-D coils also have electronic calibration resulting in quieter detecting,



#### Frequency (X-TERRA Series)

X-TERRA detectors are capable of operating at one of three different frequencies; 3 kHz, 7.5 kHz or 18.75 kHz. The operating frequency is determined by the coil being used and affects the detector's performance. Generally, the lower the frequency, the deeper the detector can penetrate the ground. At low frequencies sensitivity to small low conductive targets is reduced. The higher the frequency, the higher the sensitivity to small targets, however detection depth is reduced.

Operate the detector at 18.75 kHz (high frequency) to find small nuggets and fine jewellery. Operate the detector at 3 kHz or 7.5 kHz (lower frequencies) when searching for coins and relics.

## Coil Selection Charts

### Commander coil selection chart (Suit all SD, GP and GPX detectors)

	Small shallow nugget	Large deep nugget	Highly mineralised	Less mineralised	Ground Coverage	Manoeuvrability	Iron Reject	Waterproof
18-inch Round Monoloop	★	★★★★★	★★★★	★★★★★	★★★★★	★	✗	○
18-inch Round Double-D	★	★★★★	★★★★★	★★★★	★★★★★	★	✓	○
15 x 12-inch Elliptical Monoloop	★★	★★★★	★★★★	★★★★★	★★★★	★★	✗	○
15 x 12-inch Elliptical Double-D	★	★★★	★★★★★	★★★★	★★★★	★★	✓	○
11-inch Round Monoloop	★★★★	★★★	★★★★	★★★★★	★★★	★★★★	✗	○
11-inch Round Double-D	★★★	★★	★★★★★	★★★★	★★★	★★★★	✓	○
10 x 5-inch Elliptical Double-D	★★★	★★	★★★★★	★★★★	★★	★★★★★	✓	○
8-inch Round Monoloop	★★★★★	★	★★★★	★★★★★	★	★★★★★	✗	○

○ Water resistant: May be splashed, washed, used in drizzling rain, or moved through wet grass. Must not be submersed under water.

### X-TERRA Minelab coil selection chart

	Small targets	Medium targets	Large/deep targets	Pinpointing accuracy	Ground coverage	High trash ground	Waterproof
6-inch Concentric 7.5 kHz	★★★	★★★	★	★★★★★	★	★★★★★	●
6-inch Concentric 18.75 kHz *	★★★★★	★★	★	★★★★★	★	★★★★★	●
9-inch Concentric 3 kHz ^	★★	★★★	★★★★	★★★★	★★★	★★★	●
9-inch Concentric 7.5 kHz	★★★	★★★	★★★	★★★★	★★★	★★★	●
9-inch Concentric 18.75 kHz *	★★★★	★★★	★★	★★★★	★★★	★★★	●
10.5-inch Double-D 7.5 kHz	★★	★★★★	★★★	★★	★★★★	★★★	○
10.5-inch Double-D 18.75 kHz *	★★★	★★★	★★	★★	★★★★	★★★	○
10 x 5-inch Double-D 18.75 kHz *	★★★★	★★	★★	★★★	★★★★	★★★	○

^ Not compatible with X-TERRA 30, 50 & 305

\* Not compatible with X-TERRA 30

○ Water resistant: May be splashed, washed, used in drizzling rain, or moved through wet grass. Must not be submersed under water.

## X-TERRA Coiltek Manufacturing coil selection chart

	Small targets	Medium targets	Large/deep targets	Pinpointing accuracy	Ground coverage	High Trash Ground	Waterproof
All Terrain- 15-inch Double-D 3 kHz <sup>^</sup>	★	★★★★	★★★★★	★★	★★★★★	★	●
All Terrain- 15-inch Double-D 7.5 kHz	★★	★★★★	★★★★	★★	★★★★★	★	●
All Terrain- 15-inch Double-D 18.75 kHz*	★★★	★★★	★★★	★★	★★★★★	★	●
Digger- 7-inch Double-D 3 kHz <sup>^</sup>	★★★	★★★	★★	★★★★★	★	★★★★★	○

<sup>^</sup> Not compatible with X-TERRA 30, 50 & 305

\* Not compatible with X-TERRA 30

○ Water resistant: May be splashed, washed, used in drizzling rain, or moved through wet grass. Must not be submersed under water

## CTX 3030 coil selection chart

	Small targets	Medium targets	Large/deep targets	Pinpointing accuracy	Ground coverage	High trash ground	Waterproof
CTX 06 - 6-inch Double-D	★★★★★	★★★	★★	★★★★★	★	★★★★★	●
CTX 11 - 11-inch Double-D	★★★	★★★	★★★	★★★	★★★	★★★	●
CTX 17 - 17 x 13-inch Double-D	★★	★★★	★★★★★	★★	★★★★★	★	●

## Eureka Gold coil selection chart

	Small targets	Large/deep targets	Ground coverage	Manoeuvrability	Waterproof
8-inch Double-D Goldsearch coil (Goldsearch 800)	★★★★★	★★★	★★★	★★★★★	○
10-inch x 5-inch Elliptical Double-D Easy-sweep GoldSearch Coil (Goldsearch-1000)	★★★★	★★★★	★★★★	★★★★	○
11-inch Round Double-D GoldSearch Coil (GoldSearch-1100)	★★★	★★★★★	★★★★★	★★★	○

○ Water resistant: May be splashed, washed, used in drizzling rain, or moved through wet grass. Must not be submersed under water.