



NATIONAL GEOGRAPHIC™

Metal Detector Instruction Manual

Item Number: 80-20011



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With your metal detector, you can hunt for coins, relics, jewelry, gold, and silver just about anywhere. The detector is versatile and easy to use.

The detector's features include:

LCD Display—shows the probable type of metal with an arrow, the depth of the target, DISC/NOTCH range, the level of SENS with segment, the operating mode, and low battery indication.

Three Tone Audio Discrimination—sounds distinctive tones for different types of metal.

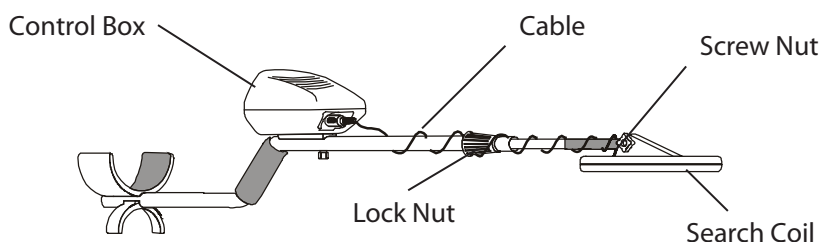
Notch—ignores junk metal and finds valuable items by setting the disc and notch range.

Super Slow Sweep Identification—with a very slow sweep of the search coil to discriminate different types of metal.

Headphone Jack—lets you connect headphones (not supplied) and operate without trouble.

Waterproof Search Coil—lets you use the detector even if you must put it under water.

Note: Your metal detector requires two 9-volt alkaline batteries (not supplied).

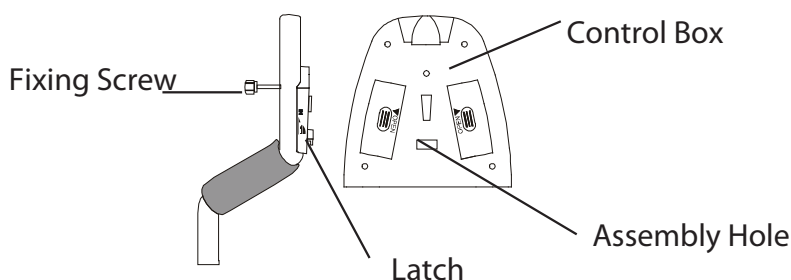


Preparation

Assembling the Detector

Assembling your detector is easy and requires no special tools. Just follow these steps.

1. Insert the latch on the top of the handle into the assembly hole on the bottom of the control box. Then slightly pull the handle in the direction of IN on the handle to fix the latch in place. Secure the control box with fixing screw properly.



2. Unscrew the knob on the search coil and remove the knob connector. Insert the stem and align the holes on the search coil bracket and the stem. Push the connector through the holes and tighten the knob.

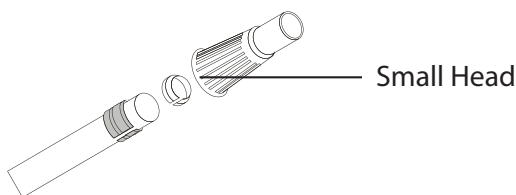
3. Wind the search coil cable around the stem. Leave enough slack in the cable. Insert the search coil cable plug into the five pin jack on the front control box's housing.

4. Turn the stem's lock nut clockwise until it loosens. Lengthen or shorten so when you stand upright with the detector in your hand, the search coil is level with and about 1/2 to 2 inches above the ground with your arm relaxed at your side. Turn the stem's lock nut counter-clockwise to lock it in place.

Caution:

The search coil's plug fits into the connector only one way. Do not force the plug or you could damage it.

Do not overtighten the search coil or use tools such as pliers to tighten it. You don't need to disassemble the stem lock nut. In case you disassemble it carelessly, place the washer on the top of the stem connected with the handle with the small head of the washer upwards. Then hitch the stem lock nut on the washer then tighten it to lock it in place.



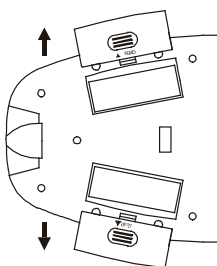
Installing the Batteries

Cautions:

Use only fresh alkaline batteries of required size.

Do not mix the old and new batteries or different types of batteries.

1. Slide the POWER button to turn on the power.
2. Slide the left and right battery covers off in the direction of the arrow.
3. Place a 9V battery into the battery compartment matching the polarity symbols (+ and -) marked inside.



Warning:

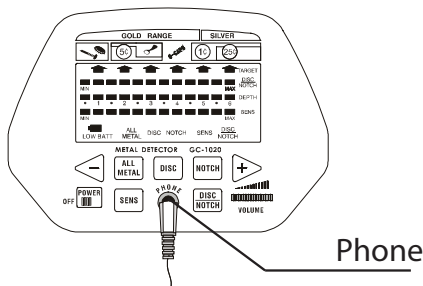
Dispose of old batteries promptly and properly. Never bury or burn them.

Caution:

If you don't plan to use the unit for a week or more time, remove the batteries. Batteries can leak chemicals that can destroy electronic parts. To extend the battery life, exchange the left and right battery after 3-4 hours of operation.

Using Headphones

1. Insert the headphones' 3.5mm plug into the PHONE jack. At this time the internal speaker disconnects.
2. Set the VOLUME to the desired setting.



Listening Safely

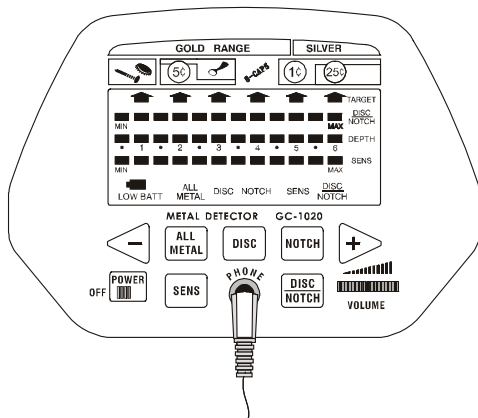
To protect your hearing, set the volume to the lowest setting before you begin listening, adjust the volume to a comfortable level.

Do not listen at extremely high volume levels. Extended high volume listening can lead to permanent hearing loss.

Do not wear headphones while operating your detector near high-traffic areas. Pay attention to traffic safety.

Functions and Indications

1. A Quick Look at the Detector



2. Displays

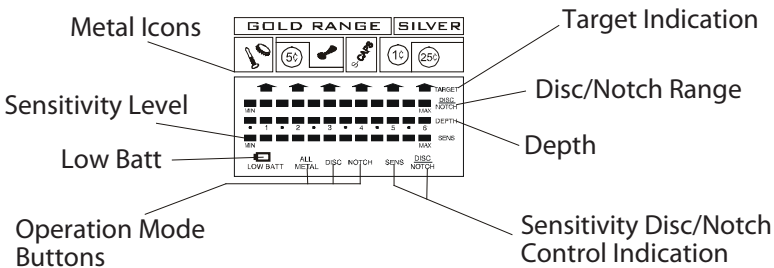
The indicator of target includes target icons and LCD displays and is located at the top of the detector. It can indicate coins of different type, gold, silver etc. When the detector detects an object, an arrow appears below the target icon of probable type of metal being detected. Also displays the depth of the target. If the detector receives a strong signal, the arrow appears steadily. If the signal is weak, the arrow blinks or does not appear.

Note:

If the detecting pauses for about 5 seconds, the arrow will disappear.

If an arrow points to a coin denomination, the detector might be detecting either a coin or another type of metal (such as jewelry, tokens, medals, or even junk metal) of similar size and type to the coin.

Since the indications are approximations, the detector might not have actually found the item it indicates. The indicator is only a visual reference to help you decide if an item is worth investigating.



GOLD RANGE

IRON FOIL—indicates that the target is probably iron or foil. Some oxidized iron might register somewhere within the SILVER range.

5¢(NICKEL)—indicates that the target is probably 5¢ or a nickel. Some small gold rings might register within this range.

PULL TAB—indicates that the target is probably a pull tab of an aluminum can. Some small gold rings might register within this range.

S-CAPS—indicates that the target is probably a type of metal like bottle cap with whorl. Some medium sized gold rings might register within this category.

1¢—indicates that the target might be a zinc penny or a copper coin. Some large rough gold items might register within 1¢ category.

SILVER Range

1¢ 25¢—indicates that the target is probably silver coin, 25¢ or 1¢. Some large aluminum coin might register within 1¢ 25¢ category.

TONES

If the detector is set to the ALL METAL target mode, it sounds a single tone when it detects any type of metal. If you set the detector to the DISC or NORTCH modes, the built in audio identification system sounds a unique audio tone for each of three categories of metal. This makes it easier to identify the metal being detected. The detector sounds a low tone when it detects foil, nail, bottle cap or nickels. A medium tone for aluminum pull tabs, zinc or copper items. A high tone is for brass or silver items.

Notes:

When you set the detector to DISC or NOTCH mode, the detector sounds a medium or high tone when it detects highly oxidized iron. An arrow appears in medium or high tone area.

Depending on the quality, about 15 percent of gold rings cause the detector to sound a medium tone.

GOLD RANGE			SILVER	
				
LOW TONE	MEDIUM TONE			HIGH TONE

OPERATION

Turning On the Detector

1. Slide The Power Switch To On.

The unit displays all symbols on the LCD screen. The detector sounds low , medium, high tones respectively. After about 2 seconds the detector enters stand-by state. At this time the LCD displays ALL METAL and SENS. The value of SENS on the segment is 5. The range from MIN. to MAX. for DISC/NOTCH is available.

2. Setting The Operation Mode

The detector comes with three operating modes of ALL METAL, DISC,NOTCH. You can select the desired mode by relative touch key.

a. All Metal—used for detecting any type of metal. When the detector detects any type of metal, it sounds a tone.

Note: When you operate in this mode, controls of DISC and NOTCH do not function except SENS. To adjust the sensitivity, first press SENS and + to increase the sensitivity, then press - to decrease it.

b. Disc—used for target discrimination. You can set the target range from MAX to MIN by pressing DISC/NOTCH and + & - keys. The detector can detect the metal type indicated on the display. Meanwhile the detector rejects other metal types without displaying on the screen. For example, press - key, 4 levels on segment from Max to Min is increased. At this time, the detector can detect S- CAPS, 1¢ and also 25¢, other types of metal are rejected.

c. Notch—to ignore the metal type you do not want. You can select the metal type desired by pressing the + and - keys. The LCD segment will indicate the selected types of metal. The detector can detect the selected metal type.

TESTING AND USING THE DETECTOR

To learn how the detector reacts to different metals, you should test it before you use it the first time. You can test the detector indoors and outdoors.

Indoor Testing and Use

1. Slide POWER to ON
2. Set the operating mode.
3. Place the detector on a wooden or plastic table, then remove any watches, rings, or metal jewelry you are wearing.
4. Adjust the search coil so the flat part points towards the ceiling.

Note:

Never test the detector on a floor inside a building. Most buildings have metal of some kind in the floor, which might interfere with the objects you're testing or mask the signal completely.



5. Slowly sweep a sample of the material you want the detector to find (such as a gold ring or a coin) 2-3 inches or more above the face of the search coil. When the detector detects any metal, it sounds a tone and an arrow appears below the target icon. Also LCD displays the depth of the target.

Note:

If you are using a coin, the detector will detect it more easily if you hold it so a flat side is parallel with the flat side of the search coil. A sweep with the side of coin over search coil might cause false indication and unstable display of arrow.

Outdoor Testing and Use

1. Slide POWER to ON. Set the operating mode.
2. Find an area on the ground outside where there is no metal.
3. Place a sample of the material you want the detector to find (such as a gold ring or a coin) on the ground.

Note:

If you are using valuable metal such as gold to test the detector, mark the area where you place the item, to help you find it later. Do not place it in tall grass or weeds).

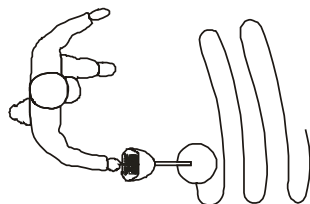
4. Hold the search coil level to the ground about 1~2 inches above the surface, slowly move the search coil over the area where you placed the sample, sweeping the search coil in a side-to-side motion.

Search Coil Sweeping Hints:

Never sweep the search coil as if it were a pendulum. Raising the search coil while sweeping or at the end of a sweep will cause false readings.



Sweep slowly hurrying will cause you to miss targets.



It's better you sweep the search coil from side to side in an arc line of 3 inches motion and keep the search coil parallel with the ground.

If the detector detects the item, it sounds a tone, an arrow and the depth appear on the display below the target icon.

If the detector does not detect the item, make sure that the target mode is set correctly for the type of metal you're searching for. Also make sure that you're moving the search coil correctly.

Notes:

The detector responds with a signal when it detects most valuable metal objects. If a signal does not repeat after you sweep the search coil over the target a few times, the target is probably junk metal.

False signals can be caused by trashy ground, electrical interference, or large irregular piece of junk metal.

False signals are usually broken or non-repeatable.

Adjusting SENSITIVITY

After you become familiar with how your detector works, it's important to fine tune the sensitivity to get a good effect.

Press the touch button SENS on the panel. Then press + or - to increase or decrease the sensitivity. The level on the segment will be displayed from high to low position.

Note:

In order to detect the target deeply buried, you can adjust the SENS to a high position. But not to set the level of SENS to Max position, or the detector will receive interference and false signal from broadcast antenna and other electronic lines. The detector will have unstable arrow and irregular tone indications.

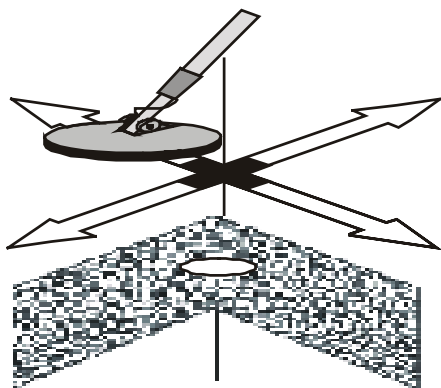
Application Hints

Pinpointing The Target

Accurately pinpointing a target makes digging it up easier. But it takes practice. We suggest you practice finding sample on your own property before you search other locations.

Follow these steps to pinpoint a target.

1. When the detector detects a buried target, continue sweeping the search coil over the target in a narrowing side-to-side motion.
2. Make a visual note of exact spot on the ground where the detector beeps.
3. Stop the search coil directly over this point on the ground. Then move the search coil straight forward away from you and straight back towards you a couple of times.
4. Repeat steps 1-3 at a right angle to the original search line, make a mark of "X". The target will be directly below the "X" at the point of the beep response.



Factors That Affect The Detecting

It's difficult to have an accurate detecting result. Sometimes the detecting may be restricted by some factors.

1. Conditions For The Target Being Detected

The angle of the target buried in the soil.

The depth of the target.

The level of oxidization of the target.

The Size of the target.

Electro-magnetic and electrical interference surrounding the target.

If you detect patiently and correctly and practice more times, you'll get satisfactory result.

CARE AND MAINTENANCE

Your GC1020/3020 metal detector is an example of superior design and craftsmanship. The following suggestions will help you care for your metal detector so you can enjoy it for years.



Handle the detector gently and carefully. Dropping it can damage circuit boards and cases and can cause the detector to work improperly.



Use the detector only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage the cases of the detector.



Keep the detector away from dust and dirt, which can cause premature wear of parts.



Wipe the detector with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the detector.

NOTES:



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