

Price \$3.00

INSTRUCTION MANUAL

SCANNER Models

XP-Pro



Coin Scanner

XP-350



COMPASS

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Congratulations and thank you from all of us at COMPASS

Welcome to the COMPASS recovery team. Your confidence in our products is very much appreciated by management and all employees. It is our hope you enjoy this fascinating hobby, and that many unique and valuable finds be made with your new metal detector.

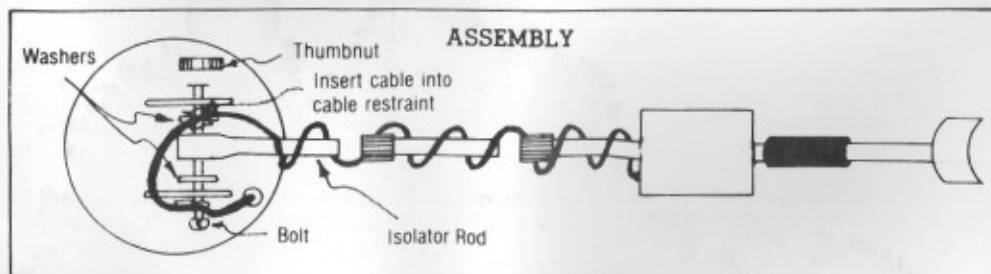
COMPASS engineers have provided state-of-the-art electronic technology in our detectors. In order to take full advantage of this high tech capability you must read and understand this manual fully. Once the basics are understood, it is important to use your detector as often as possible. The more it is used the more capable you will become, resulting in more rewarding finds.

Good hunting!

ASSEMBLY

As you unpack your detector, give it a thorough inspection for physical damage, paying particular attention to any area where it appears that the shipping carton was fractured or punctured. If physical damage has occurred or any item is missing, do the following: (A) Save the shipping carton and inserts and (B) Call the shipping company and ask that a damage inspection be made. If shipment is by parcel post, contact your local postmaster.

1. Install the plastic isolator rod to the search coil with the bolt and thumbnut provided. Ensure that the two rubber washers are inserted in the isolator rod depressions (Fig. 1).
2. With the telescoping shaft extended, insert the large end into the rod at front of the control housing.
3. Slide electronic housing onto search rod.
4. Wrap the search coil cord over the top of the shaft (clockwise as you are looking at the top). Do not start wrapping cable underneath. Leave enough slack so that search head angle can be changed through its complete range without cable tightening against shaft.
5. Attach search coil connector.



SIDEMOUNTING

Your SCANNER detector is very lightweight and well balanced. However, for long periods of use or competition treasure hunts, sidemounting the electronic housing as shown in fig. 2 provides additional arm comfort.

1. Disconnect the search coil cable from the electronic housing.
2. Slide housing off handle by pulling it towards you. Fig. 3
3. A bracket on the underside of housing is provided for sliding over your belt. fig. 4
4. Unwrap search coil cable until only a few wraps are left around the rod.
5. Connect search coil connector to control housing.

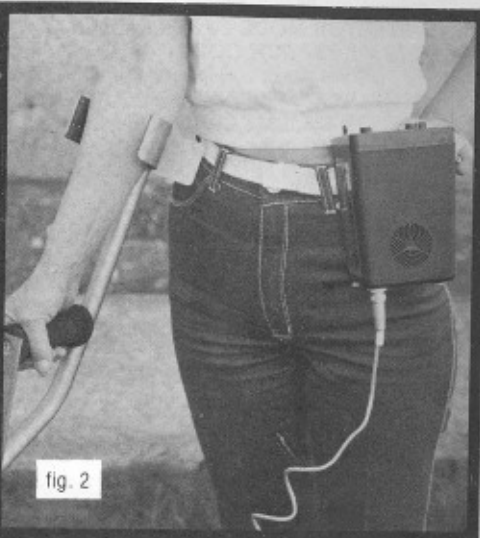
fig. 3



fig. 4



fig. 2



WHERE TO USE YOUR DETECTOR

Following are a few examples of application and where to use your detector. Any item that contains metal in mass can be found with a metal detector.

COINSHOOTING — Any place where people have gathered in groups over the years is an ideal location to coinshoot. Older parks, homes, and schoolyards will produce the older and potentially more valuable silver coins, jewelry, and perhaps the elusive gold coin.

BEACHCOMBING — Popular beaches are a good source for coins and valuable jewelry. After a storm old sand is moved exposing new territory for the detector.

RELIC HUNTING — Historic battlefields other than national parks can be very exciting to search. Items that can be found include: cannonballs, guns, mini balls, shells, swords, uniform buttons and buckles, knives, coins, etc.

Ghost towns or old mining areas produce many interesting and sometimes valuable artifacts and gold nuggets.

PROSPECTING — Ancient riverbeds, or searching washes, gullies, and old tailings from mines produce gold nuggets with a detector. The largest gold nugget currently in existence weighs 720 oz. and was found with a detector.

CACHE HUNTING — A certain amount of research is usually required to determine the approximate location of a cache or treasure. However, old homestead pokes and grandma's cookie jars are often found using common sense locations such as around the big tree, post hole banks, barns, chicken coops, under the porch, bedroom walls, etc.

Other possible applications include: locating metal property corner stakes or a septic tank, law enforcement, locating nails in logs prior to sawing, detecting metal objects located in animals or humans, metal sprinkler or valve head locating, and shallow pipe detection. COMPASS' Pipe Seeker V is recommended for pipe location, since your SCANNER detector will only locate pipes near the surface.

DETECTOR DEPTH CAPABILITY AND TARGET QUALIFICATIONS

DEPTH CAPABILITY

Factors that determine depth of detection of metal detectors are:

1. **QUALITY OF DETECTOR PERFORMANCE**
2. **OPERATOR SKILL**
3. **MASS AND THICKNESS OF TARGET**

An object's flat surface is much easier to detect than the same object's edge, such as a coin. Thin gold nuggets can be very difficult or impossible to detect.

4. **DETECTOR MODE OF OPERATION**

5. **SIZE OF SEARCH COIL**

12" coil will detect 20% deeper than 8"; a 16" coil will detect 40% deeper than an 8" coil.

6. **AMOUNT OF GROUND MINERALIZATION**

7. **LENGTH OF TIME TARGET HAS BEEN IN THE GROUND**

Acids and salts in the soil cause corrosion on the metal. The soil then absorbs the corroded metal; thus the object appears to be larger than it actually is (halo effect).

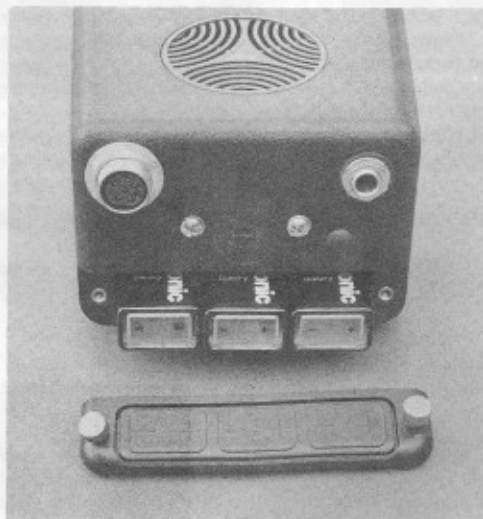
TARGET QUALIFICATIONS

The "SCANNER" detectors will detect most ferrous and all nonferrous metals that have a mass larger than a match head. The electromagnetic field described in "Theory of Operation" will penetrate through wood, rock, adobe, ice, snow, soil and non-reinforced concrete and asphalt. The metal detector will not detect glass, gems, or sulfides. An object must have a conductive property in order for it to cause a reaction to the search coil's magnetic field.

BATTERIES

1. Your Scanner detector operates from three nine volt batteries.
2. For checking condition of batteries refer to **FUNCTION AND FEATURES OF CONTROLS #2 BATTERY CHECK**.
3. When installing batteries, the polarity of each cell must be inserted properly.
4. If the detector is not to be used for a long period of time, remove and store batteries in a dry, cool place.
5. Alkaline and heavy duty carbon zinc batteries will provide adequate life. Alkaline or extra heavy duty are recommended.
6. To replace batteries loosen screws on battery compartment and remove battery door (fig. 5).

fig. 5



CONDENSED OPERATING INSTRUCTIONS

If your enthusiasm and excitement for using your new detector will not allow for a complete reading of this manual, the following will provide quick and basic operation. A preset position is provided on each control that will provide average performance.

1. Set each control to preset position.
2. Detector is turned on when Power Level is set at preset position. It is not tuned and ground adjusted for field operation.
3. Press and release (red) TRASH OUT tactile switch. The detector is now set to operate in the motion trash out (discriminate) mode. Certain trash items will be eliminated. Since this is a motion mode, the search coil must be moving to detect a target.
4. Operate the search coil on or very near the ground.
5. Once a target is detected, use the non-motion Pin Point mode for locating exact location that target is beneath.
 - A. Place search coil on the ground and slightly away from the target.
 - B. Press and release Pin Point (gold) tactile switch.
 - C. Slide the search coil over the target in a (+) cross pattern while listening for the loudest audio response. The target will be directly below the center of coil. For loud surface targets read "Pin Pointing a Target" on page 13.
6. **NOTCH LEVEL (XP-Pro Model only)**

Auto preset position provides the following characteristics.

 - A. TRASH OUT control is disabled.
 - B. U.S. Nickels and some rings are notched in.
 - C. Trash items that will generally be eliminated include; most nails, foil, bottle caps, pull tabs (other than those that are electrically identical to a U.S. nickel), pull tab tails, and pull rings. Certain rings, copper pennies, nickels, dimes, quarters, half and silver dollars will be detected.
7. **METER TARGET ID (XP Pro and Coin Scanner only)**
 1. Target meter identifies targets shown in either trash out or pin point modes.
 2. Meter locks on target until another target passes under search coil or either tactile push button mode switch is pressed and released.
 3. Read coin depth - Press and hold Pin Point tactile switch.

FUNCTION AND FEATURES OF CONTROLS (Fig. 6)

1. POWER LEVEL

Turns detector ON and OFF, then adjusts the detector's sensitivity for all modes of operation. The preset position is recommended for the first few days of operation. In areas of high mineralization, the preset or lower (CCW) setting is recommended. For low ground mineralization, the higher (clockwise) settings towards MAX can be used. Settings beyond preset in highly mineralized ground may give false signals. Higher settings towards MAX will provide deeper depth of detection.

2. BATTERY CHECK

There is no front panel control for battery check. All models feature continuous monitoring of the two signal control batteries (middle and left facing). When these nominal 9 volt batteries each drop below 5 volts, the pitch of the target signal drops, alerting the operator. The detector will continue to function after that with reduced sensitivity until eventually all sensitivity is lost when the batteries are dead. When the battery check registers below "Battery Good" on the XP-Pro or Coin Scanner meter, or when the audio signal drops to the lower, "throaty" sound, you should change the left and center batteries to maintain peak performance. The right hand battery powers the audio signal volume. It will generally last 3 to 5 times longer than the other two batteries. If the target sound intensity becomes diminished, this battery should be changed.

Models with the meter include an additional "turn on" battery check for the first few seconds of operation. Battery life for the target identification models with meter should approach 10 hours using extra heavy duty transistor batteries. Models without the meter should get even longer battery life. Note that batteries also have a longer total life when used for many short periods of time rather than if they are operated continuously until they go dead.

3. PIN POINT

Pressing tactile switch down and releasing puts the detector into an all-metal mode of operation. Search coil motion is not required to detect an object. As a result, precise pinpointing of target is accomplished in this mode.

4. TRASH OUT

To operate in TRASH OUT mode, press and release TRASH OUT (red) tactile. Fully adjustable to allow detector to be set to eliminate undesirable targets (nails, bottle caps, foil, pull tabs, and screw caps) from desirable targets (coins, jewelry, gold, relics, etc.). Never use a higher level than necessary for the following reasons:

- A. Depth of detection decreases at the higher numbers.
- B. When set to eliminate pull tabs or higher, the U.S. nickel, thin gold nuggets, and some thin gold and silver rings may be rejected. When set higher to screw cap rejection, zinc (1982 or newer) and Indian Head pennies will also be eliminated.

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5. **NOTCH LEVEL (XP-Pro model only)**

Works in conjunction with TRASH OUT tactile switch. The primary purpose of the NOTCH LEVEL control is to reject common items such as pull rings and lift tabs while still detecting the U.S. nickel and certain rings. This continuously variable control adjusts the internal notch filter circuitry to the desired target level. The target could either be accepted or rejected by position of REJECT/OFF/ACCEPT toggle. The control panel decal is labeled to show the approximate location where certain objects respond to the NOTCH LEVEL settings. Each detector will vary somewhat, so experiment with certain trash items to determine the exact position for each on your detector.

***NOTE:** Notch level adjustment can be made for objects ranging from low conductivity, such as iron and foil, through the higher conductive trash-type targets - such as screw caps. At the upper range of adjustment some U.S. coins, to include the zinc penny and some Indian Head or wheat types, may also be accepted/rejected with the notch discrimination system. The Notch Level control will not go high enough to cause a loss of most copper pennies, dimes, quarters, halves and dollars. The primary use of notch is to eliminate bothersome trash and recover the maximum number of desired coins. Thus, the higher conductive coins will always be detected and cannot be selectively notched in. Notch Accept only works for objects which have been discriminated by the Trash Out level.

6. **AUTO NOTCH LEVEL POSITION (XP-Pro model only)**

This is the ideal setting for eliminating the maximum amount of trash while still detecting most coins and certain rings. Setting of TRASH OUT control does not have a bearing on what trash items are eliminated in AUTO NOTCH. The AUTO NOTCH (clicked full ccw setting) is factory set to notch in a U.S. nickel and other coins while eliminating most trash items as follows:

- A. Trash items that are eliminated: most nails, foil, bottle caps, pull tabs (other than those that are electrically identical to a U.S. nickel), pull tab tails, and pull rings.
- B. Common U.S. coins that will be detected: pennies, nickels, dimes, quarters, half and silver dollars, and certain rings.

7. **ACCEPT/OFF/REJECT TOGGLE (XP-PRO model only)**

This toggle is used to select the function of the notch filter in the discriminate circuit or turn NOTCH OFF. In the ACCEPT position only those targets encompassed by the NOTCH LEVEL will be detected. In the REJECT position only those targets encompassed by the NOTCH LEVEL, as set by internally set notch width, will be rejected. In the OFF position the NOTCH LEVEL disengages unless set to AUTO.

8. **PHONES**

Output for optional COMPASS stereo headphones is provided. Mono headset can also be used. Headphones allow you to hear the deeper targets that produce a softer radio tone. They are highly recommended when detecting in a noisy environment. Headphone operation reduces power consumption which extends battery life. When phones are inserted, speaker is disconnected.

9. **SPEAKER**

Generates a tone to notify the operator of a found target and the identification category of targets while discriminating. The speaker shuts off when headphones are used.

10. **METER (XP-PRO and COIN SCANNER models only)**

- A. Metered indication of probable identity of various targets. (Search coil must be in motion for metered identification.)
 - 1. Coin types shown are U.S. coins. The penny is shown in both copper (Cu) and zinc (Zn).
 - 2. Metered target identification works in all modes of operation.
 - 3. Detector may audibly detect targets deeper than meter will indicate.
 - 4. One or two sweeps over target will usually identify it. Meter will continue to show target until another target is detected, or either the TRASH OUT or PIN POINT tactile switches are depressed and released. It is important to sweep the center of the search coil over the target for proper target identification.
 - 5. The 0 to 90 scale can be used to register other trash or desirable targets not shown on the meter scale.
- B. Battery condition is checked automatically each time detector is turned ON.

BENCH TESTING PROCEDURES

It is important to understand the operation of the detector before detecting under field conditions. Bench testing will teach you the audio reaction of the detector to both "desirable" and "undesirable" targets. Certain targets close to the search coil will cause an overload error target response. Moving target 1" to 2" farther from search coil will provide correct reading.

1. SET UP

- A. Set the detector on a table with the search coil at least two feet away from any metal object and with the coil bottom facing as shown in fig. 7.
- B. Remove any rings, watch, or jewelry you may be wearing.
- C. Obtain the following "desirable" and "undesirable" targets.
 - a. copper penny (1981 mint date or older)
 - b. zinc penny (1983 mint date or newer)
 - c. U.S. nickel
 - d. quarter
 - e. pull tab ring and lift tab
 - f. bottle cap
 - g. rusty nail
 - h. pop bottle aluminum screw cap (not crushed)
 - i. gum wrapper

fig. 7



2. BENCH TESTING PIN POINT (ALL METAL) MODE AND POWER LEVEL

- A. With all controls set to their preset positions, press and release PIN POINT (gold) tactile switch.
- B. Pass all of the "desirable" and "undesirable" objects as outlined (1.-C.) above over the search coil about 2" away from the coil. Notice that the coin responses are similar to the trash items. In the PIN POINT mode of operation trash items are not eliminated.
- C. Hold a coin over the search coil. Notice that the coin is detected and continues to provide a signal even though it is stationary. This indicates that the PIN POINT mode does not require search coil motion in order to detect a target. As such, the PIN POINT mode is used for pin pointing exact target location. Moving the coin closer and farther away provides a comparison of deeply buried targets versus shallow targets. The strongest target response is in the center of the search coil.
- D. Adjust POWER LEVEL control to 9 o'clock and note the reduction in overall distance away from the search coil at which any given target can be detected. Settings toward power OFF allow less depth of detection, but the advantage of smoother operation over highly mineralized ground or noisy electrical areas.

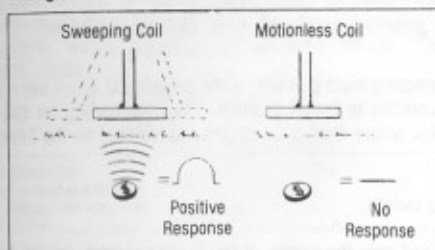
3. BENCH TESTING TRASH OUT (Discriminate) MODE

This mode requires the search coil or target to be in motion for detection. See fig. 8.

1. Set Up

- POWER LEVEL to preset position.
- NOTCH LEVEL to #4 or any setting other than AUTO.
- ACCEPT/OFF/REJECT toggle to OFF.
- TRASH OUT to S. CAP.
- Press and release TRASH OUT tactile switch.
- Hold a quarter over the search coil. The detector will not sound out. It must be in motion as shown in fig. 8.

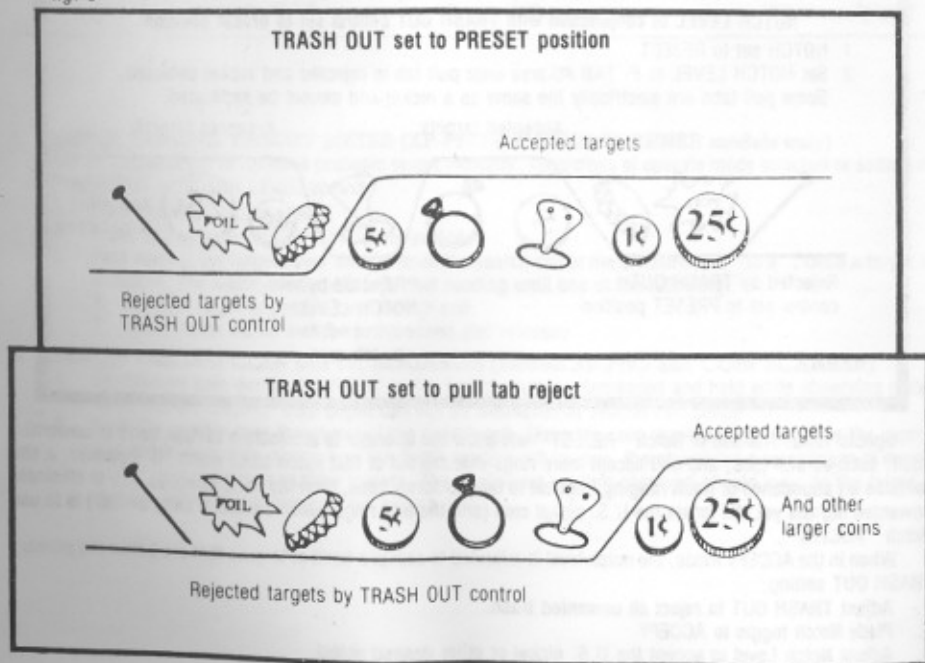
fig. 8



MOTION REQUIRED TO DETECT TARGETS IN TRASH OUT MODE

- Pass the quarter and copper penny (1981 or older) back and forth over the search coil. The detector will give a positive audio response.
- Move the pull tab over the search coil. The audio response will be negative.
- Pass the other targets over the search coil and observe audio response. Note the following:
 - The U.S. nickel and zinc penny (1983 or newer) will give a negative audio response.
 - Most rings will give a negative audio response.
 - Certain screw caps may not be rejected.
- Adjust TRASH OUT control to preset position and touch tune (press and release TRASH OUT tactile switch). The zinc penny, nickel, rings, and certain trash targets will now produce a positive audio response. See fig. 9.

fig. 9



4. DISENGAGE NOTCH LEVEL

Important - To disengage NOTCH LEVEL control both A and B below must be done.

A. NOTCH LEVEL control must be set to other than AUTO position.

B. Toggle ACCEPT/OFF/REJECT must be set to OFF position.

5. BENCH TESTING AUTO (PRESET) NOTCH LEVEL — This is the ideal setting for eliminating the maximum amount of junk while detecting most coins including nickels and many rings.

A. Set all controls to their preset positions.

B. Double check to ensure that NOTCH LEVEL is set to AUTO.

C. This is a motion mode, so the targets or search head must be moving.

D. Pass all "desirable" and "undesirable" objects as outlined in (1.-C.) over search coil about 2" from the coil. Observe the following.

1. These items will be detected as good targets; penny, U.S. nickel and quarter.

2. All other items will be rejected.

6. BENCH TESTING NOTCH LEVEL (rejecting most pull tabs while detecting U.S. nickel - see Fig. 10.)

A. Set POWER LEVEL and TRASH OUT controls to Preset position. The ideal setting for the TRASH OUT control is a point near the Preset marker where most pull tab tails are rejected by the TRASH OUT control, and U.S. nickel is detected.

B. Place NOTCH Toggle to REJECT.

C. Press and release TRASH OUT tactile switch.

D. Set NOTCH LEVEL to TABS.

E. Pass a pull tab 2" to 3" over search coil near the center. If tab is not rejected, adjust NOTCH LEVEL slightly until tab is rejected. Note: some pull tabs are electrically (as seen by the detector) identical to a U.S. nickel and cannot be separated from the nickel, so try several types.

F. Once pull tab is rejected, then pass a U.S. nickel over the search coil and observe that the detector responds positive. If nickel is not detected, adjust NOTCH LEVEL slightly until nickel is detected and most pull tabs are rejected. Certain pull tabs will still be detected which are outside of the notch width. Notch width is fixed and nonadjustable.

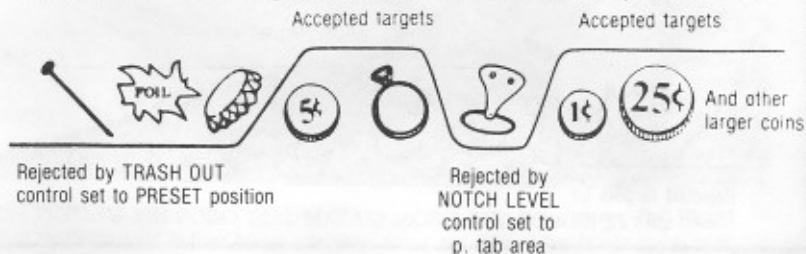
fig. 10

NOTCH LEVEL in conjunction with TRASH OUT control set to preset position

1. NOTCH set to REJECT

2. Set NOTCH LEVEL to P. TAB #6 area until pull tab is rejected and nickel detected.

Some pull tabs are electrically the same as a nickel and cannot be separated.



Special Note: The use of Notch "REJECT" will allow the operator to eliminate a certain band of unwanted trash, such as pull tabs, and still accept more rings that are out of that notch band width. If, however, a site contains an abundance of trash ranging from foil to tabs to screw caps, then the most effective way to eliminate unwanted signals yet still locate the U.S. nickel coin (and the thin rings which are electrically similar) is to use Notch "ACCEPT".

When in the ACCEPT mode, the notch level is adjusted to accept a band of targets that are below the primary TRASH OUT setting.

1. Adjust TRASH OUT to reject all unwanted trash.

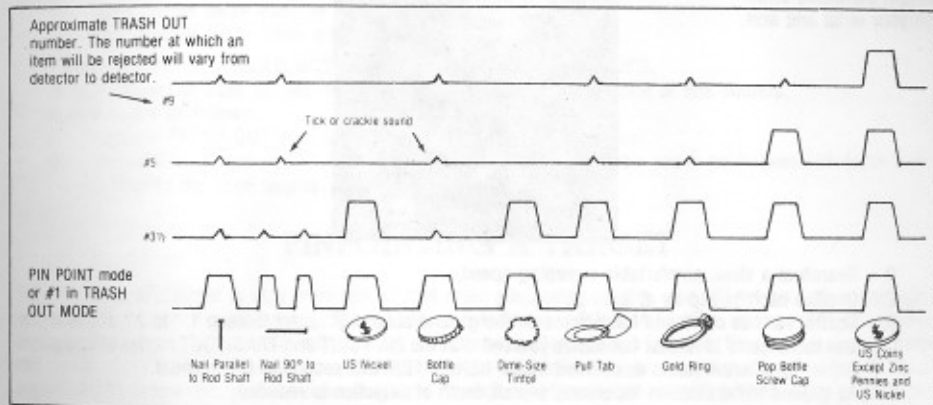
2. Place Notch toggle to ACCEPT

3. Adjust Notch Level to accept the U.S. nickel or other desired object.

7. **TRASH ELIMINATION CHARACTERISTICS** — See fig. 11

1. When the TRASH OUT control is set to eliminate a pull tab off of a pop can, it will also eliminate a U.S. nickel and most rings. This is when the NOTCH LEVEL is set to other than AUTO and the ACCEPT/OFF/REJECT toggle set to OFF.
2. When set to eliminate screw caps, Indian Head and zinc pennies (some 1982 and all 1983 or newer mint date) will also be eliminated as well as most rings and the United States nickel.
3. Because of the different metals used in foreign coins, it is difficult to list which of these coins would be eliminated at any given level of trash elimination. When in a country other than the United States, run a bench test of the various coins you wish to detect to determine the maximum level of trash elimination that can be used without eliminating the items desired to detect. The PIN POINT all metal mode could be used which, of course, would detect all coins throughout the world.
4. Large trash items such as a beer can may sound like a good target at all settings of trash elimination. However, with practice you will be able to tell the difference between a large target and a small coin-sized object.

fig. 11



8. **BENCH TESTING TARGET METER (XP-PRO and COIN SCANNER models only)**

NOTE: Target Meter is full-time probable target indicator, regardless of operate mode selected or setting of TRASH OUT or NOTCH LEVEL control.

- A. Set POWER LEVEL to preset.
- B. Press and release TRASH OUT tactile switch.
- C. Pass each of the targets over the center of the search coil at the distance of 2" to 3". Once a target is indicated, the meter needle will hold that reading until one of the following:
 1. Another target is passed over search coil.
 2. Either mode tactile switch is depressed and released.

9. **BENCH TESTING COIN DEPTH READINGS (models XP-PRO and COIN SCANNER)**

- A. To measure coin depth, PIN POINT tactile switch must be depressed and held while observing meter COIN DEPTH reading. Coin Depth can not be measured in TRASH OUT mode.
- B. Hold the quarter over the center of the search coil. Move the coin closer and farther from the search coil and to each side. Notice how the depth reading will change, thereby giving a comparison of deeply buried targets versus shallow targets. The shallowest reading observed should indicate the target is directly beneath the center of the search coil.

FIELD OPERATION

1. SET CONTROLS TO PRESET POSITION

- Press and release TRASH OUT tactile switch. Detector is now set to operate in the motion discriminate TRASH OUT mode.
- Pressing and releasing PIN POINT tactile switch puts detector in an all-metal mode for pin pointing a target.
- When operating, keep the search coil parallel to, and as close to, the ground as practical (fig. 12). COMPASS' optional search coil cover is recommended to keep sharp rocks or broken glass from damaging the watertight integrity of the coil.

fig. 12

Operate with search coil only a foot or so in front of each step. Extending shaft length increases strain on your wrist and arm.

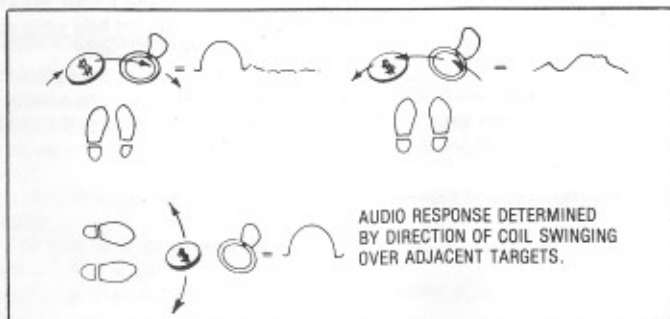


- Search at a slow, comfortable sweeping speed.
- Overlap each sweep by at least 50%.
- Scatter various coins and trash items on the ground about 18" apart. Sweep 1" to 2" above them. Use these items to further familiarize yourself with the PIN POINT and TRASH OUT modes of operation. Adjust to different items as outlined in the BENCH TESTING section of this manual.
- As ground mineralization increases, overall depth of detection is reduced.
- False signals may be caused by heavily mineralized or trashy ground. Often when the search coil is passed over the same spot, a false signal will disappear. Increasing the TRASH OUT control to a higher level (#) will help reduce false signals.
- Certain surface trash items can cause a false signal. Increasing sweep speed slightly or lifting search coil off the ground a couple inches will help.
- A nail that is laying flat in the ground and parallel to the rod shaft will sound like a single target. This same nail that is laying 90° to the rod shaft can produce a double hit in the PIN POINT mode that sounds like two targets (see fig. 11).

2. TARGET RESPONSE

A good way to become more familiar with your detector is to bury test objects in the ground at 1" depth and 1" apart. To learn the maximum depth capability, also bury pennies (1981 mint date or older) every inch from 1" to 5" in depth. Bury a dime 2" from a pull tab at 1" depth. Approach the target from all directions while observing different responses as shown in fig. 13.

fig. 13



Prior to burying test items, thoroughly clean the area of all metal targets using the all-metal PIN POINT mode. Refer to fig. 11 for proper responses.

3. **COIN DEPTH READING (XP-PRO and COIN SCANNER)**

To measure coin depth, depress and hold PIN POINT tactile. The shallowest reading observed would indicate the target is directly beneath the center of the search coil. Bury coins at different depths to familiarize yourself with this feature.

4. **OPERATING IN HIGHLY MINERALIZED GROUND**

Heavy mineral ground (high iron content) causes static or good target sounds. The following will help when hunting in this type of soil.

A. Lower POWER LEVEL.

B. Raise search coil until false signals are eliminated and then search at that height.

5. **ERRATIC OPERATION FROM ELECTRICAL SOURCE.**

This type of interference can be caused by power lines, TV and radio broadcast stations or other types of transmitting equipment. Electrical storms can also be a problem. If this type of interference causes erratic operation, the following will help.

A. Lower POWER LEVEL.

B. Move further away from the source.

C. Wrap search cable tightly around search rod.

6. **OPERATING IN AREAS WITH A LOT OF TRASH TARGETS.**

A high amount of trash targets may cause chatter or excessive crackle or tick sounds.

Solutions are as follows:

A. Increase TRASH OUT level to screw cap rejection (full clockwise).

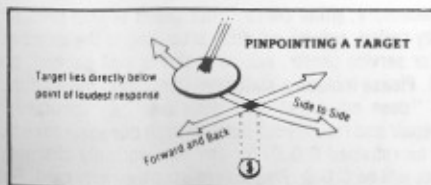
B. Use COMPASS' optional 3" Gold/Coin search coil. This will enable you to get between the trash items to identify the good targets.

PINPOINTING A TARGET

Exact location of a target is very important so that when you probe and dig, you will not scratch or damage a valuable coin or item. For pin pointing a target, depress and release PIN POINT tactile, sweep over it in a side-to-side, forward-and-back pattern as shown in fig. 14. When the loudest audio is heard, the target is directly below the center of the search coil. Long, thin, rusty items such as a nail can be an exception. A nail can be 2" to 3" away from its pinpointed location, depending upon its angle and the direction in which it lies. If the target is producing a very loud audio response (indicating it is very large or near the surface), use the following method for pin pointing.

1. **DETUNING (PIN POINT mode only):** When over the target, drop the search coil to the ground. Press and release PIN POINT tactile, which uses the target to detune detector. Now when sweeping over the target with the search coil on the ground, a narrow and fainter audio response will be heard. The target will be under the search coil center when the loudest response is heard. The closer the search coil center is to being directly over the target when detuned, results in a narrower pick up area. It is possible to set the coil directly over the object which would totally tune it out. This would be unusual, and by pressing the coil down slightly into the grass will bring the target back into range with just a narrow pick up area which is ideal.
2. **DEPTH READING METHOD (models XP-PRO and COIN SCANNER)** (PIN POINT tactile must be depressed and held): Watch meter as the search coil is moved over the target as shown in fig. 14. When the meter needle swings to the farthest right position, the target will be under the center of the search coil.

fig. 14



PROBING AND RECOVERY OF A TARGET

PROBING

A 6" to 8" screwdriver makes an ideal probing device. Once your target is pin pointed as outlined under "PIN POINTING A TARGET", insert the screwdriver into the ground gently until it touches the target. In rocky ground probing becomes quite difficult.

DIGGING A TARGET

There are several ways or methods to extract a target, depending on the area being searched.

1. Beach area: A sand scoop available at most treasure hunting shops is recommended.
2. Plugging a lawn area with a long bladed heavy duty hunting knife: Cut a 3" to 4" diameter circular plug about $\frac{3}{4}$ of the way around. Slant the knife slightly towards the center of the plug. Fold the plug back while leaving the $\frac{1}{4}$ of the plug still attached to the main lawn area. This will ensure that the plug does not die when replaced. If a full circle plug is cut in a dry lawn, the plug grass will die leaving an obvious sign that a coin hunter was there. Check the plug with your detector. If the target is not there, start extracting soil from the hole and place it on a handkerchief or piece of cardboard. When the object is recovered, replace dirt and plug. Putting the dirt on a handkerchief or on cardboard rather than on the ground makes the grass look normal and it is very difficult to tell that a treasure hunter was there.

THEORY OF OPERATION

A sine wave oscillator drives the transmit coil in the search coil. The receive coil is physically positioned and electrically adjusted to produce a null or very low output signal.

Any metal object coming within the electrical field of the transmit coil changes the balance (amplitude and phase) of the signal at the receive coil. This signal in turn is fed to a pair of phase splitters and samplers. A portion of the signal is sampled twice approximately 75° apart. This circuit samples the received signal at the two extremes of the range of signals we are interested in; namely balancing out various ground signals up to but not including elimination of a copper penny. Both signals are amplified (The trash eliminate amplifier discriminates on every item below a penny. The ground balance signal does not discriminate against any item.) By selecting varying percentages of each signal, you can control the amount (degree) of trash elimination. The phase of the selected signal and the ground balance signal are compared. The resultant signal drives the speaker.

DETECTOR CARE AND SERVICE

With proper care, your detector should last for many years. The search coil and rod are waterproof and can be cleansed with a mild cleanser. The detector housing is not waterproof and water (particularly salt water), if allowed to enter, will damage the circuit board or electronic components.

1. PROPER CARE

- A. Salt water beach detecting can be very tough on a detector and you should adhere to the following procedures:
 - a. After hunting, rinse coil and rod with fresh water. Using fresh water, dampen sponge and wipe down complete housing and controls.
 - b. If wind is blowing, use a plastic bag or appropriate detector cover to keep the sand and salt mist from getting into the controls or housing.
- B. When detecting in the rain, use an appropriate detector cover to keep water out of housing.
- C. Store detector in a dry, cool place. Do not store in car or trunk if outside temperature is over 80°F, 27°C.
- D. Avoid excessive shock or jarring. Do not drop detector.
- E. Remove batteries if storing detector over 30 days.

2. SERVICE

Should service become necessary, either contact your dealer or ship prepaid to the factory. If service is required during the warranty period, repairs are done according to the terms of the warranty. When returning a detector to the factory or service center, ensure that it is well packed, preferably in its original carton, prepaid and fully insured. Please include a statement describing the malfunction. Try to be specific. Avoid using phrases such as: "does not work" or "defective". By accurately describing the problem, our technicians can quickly repair and return your detector with our assurance that your problem has been rectified. Your detector will be returned C.O.D. for any non-warranty charges, including shipping charges. Warranty shipping charges will be C.O.D. Please read your warranty card. Return the registration portion to us and save your half of the warranty card for future reference.

TREASURE HUNTER'S CODE OF ETHICS

Metal detectors have been banned in certain parks and on some private land because of misuse by treasure hunters. Don't let this happen in your area. Follow the "Treasure Hunter's Code Of Ethics" and teach them to others.

1. On private land do not treasure hunt without owner's permission. Respect the rights of private property owners.
2. Never destroy or tamper with buildings, historical property, archaeological sites, and burial grounds.
3. Respect and observe federal, state and local laws. Aid law enforcement when needed.
4. Do not litter. Please remove all trash items with proper disposal. Leave the earth's surface and vegetation better than when you found it.
5. Fill all holes and carefully probe and dig so that no one can follow the trail of a bad treasure hunter. You can never tell where a good treasure hunter has been.

FACTORY RECOMMENDED ACCESSORIES

- 16" Ultra Deep Scan Search Coil
- 12" Deep Scan Search Coil
- 6" Ultra-Lite Search Coil
- 3" Coin and Prospecting Search Coil
- 16" Search Coil Protective Cover
- 12" Search Coil Protective Cover
- 8" Search Coil Protective Cover
- 6" Search Coil Protective Cover
- 3" Search Coil Protective Cover

Stereo Headset
Protective Vinyl Detector Bag

COMPASS Recovery Team Ball Cap
COMPASS Recovery Team Shoulder Patch
Epoxy Filled Search Coil — Eliminates the
"cork" effect in water

See your local dealer or contact COMPASS
for pricing.

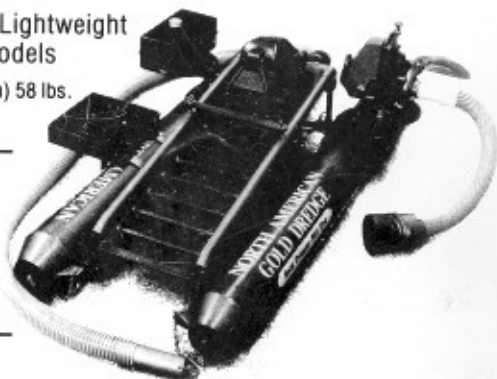
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