MODEL # TF

MADE
USA,

OPERATING MANUAL

TREASURE-FINDER

AUTOMATIC

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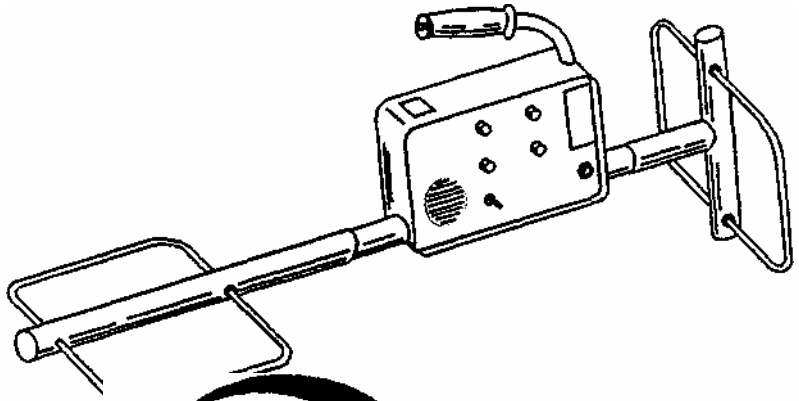


DISCOVERY
ELECTRONICS, INC.
SINCE 1981

A&S Co www.detection.com

INTRODUCTION

Congratulations on a wise move!

You are now the proud owner of the best "Two Box" style detector in the world. Since 1979 predecessors of the Treasure finder have been used in every country in the free world, and its reputation as a leader grows with each passing day.

The exclusive *AUTOTUNE* and *THUMB SET* controls, along with the patented "Two Box" *GROUND REJECT* circuity, help make the TF *so* easy to operate that you may become complacent. However, it is our recommendation that you take the time to study this manual and practice using the TF

You may take pride in the fact that you "OWN TODAY WHAT OTHERS WILL ATTEMPT TO COPY TOMORROW".

The following patents were applied for and have been assigned to Discovery Electronics, Inc.

4,348,639	United States
4,323,847	United States
346,720	Canada New
192,370	Zealand
54,156	Australia
P.2,927,842.0	Germany

LIMITED WARRANTY

Discovery Electronics, Inc. industrial metal detectors are warranted against defects in materials and workmanship for a period of twelve months (1 year) from the date of original purchase.

In case of manufacturer defects in material or workmanship, Discovery Electronics agrees to repair or replace (sole and exclusive remedy) a defective unit without charge for parts or labor.

Return the complete detector with all transportation charges prepaid to Discovery Electronics. The unit must be accompanied by proof of date-of-purchase and a detailed explanation of the defect.

The warranty does not cover damage caused by accident, misuse, alteration, unauthorized service, or damage caused by corrosive compounds. In addition, batteries and other accessories are not covered by this warranty.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Any implied warranty, including but not limited to the implied warranties of merchantability and/or fitness for a particular purpose, is limited in duration to the one year provided in this, the only, expressed warranty. Some states do not allow limitations on how long and implied warranty lasts, so the above limitation may not apply to you.

In no event shall Discovery Electronics, Inc. be responsible for incidental or consequential damages, nor damage due to misuse. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

GENERAL INFORMATION

Proper care for your detector... A metal detector is a sensitive electronic instrument. Although it does not have to be babied, reasonable care must be taken to help ensure a long trouble free life.

Make sure that the antenna fits on the shaft stub in a snug manner. If they are loose they may be tightened by prying out the "slots", that are located on each of the main shaft stubs, with a knife or screwdriver.

Keep the stub ends that the antenna slides on lubricated with either a petroleum jelly or silicon lubricant. Take care not to get lubricant directly on the electrical connector of the antenna or jack end of the stub. Dry aluminum will seize and may make it impossible for you to disassemble your detector.

Accessories are available for your new detector that will help to improve the usefulness of the unit. Check with your local dealer for all the details.

SPECIFICATIONS:

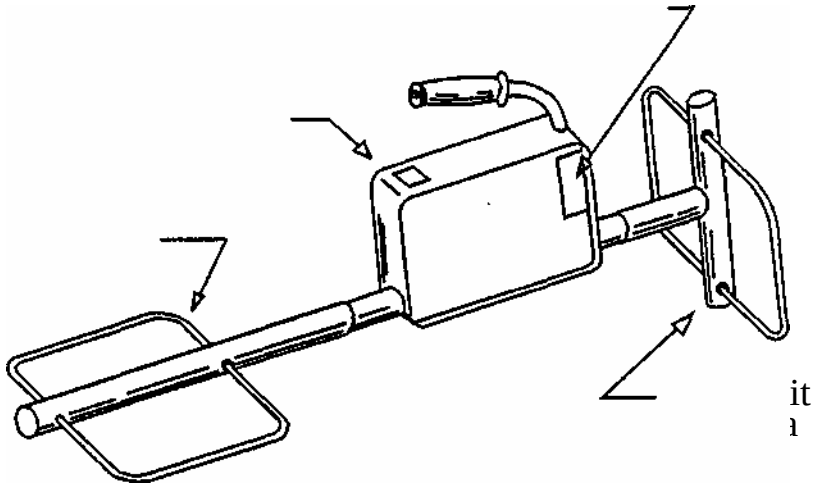
1) Operating frequency: 12.5 KHZ (nominal)
   73.5 KHZ with trace accessory
2) Operating temperature: -5° to +55° C
3) Battery type and life: • 'AA[1] size 1.5 volt penlite cells, approx. 20 hours use.
4) Limited one year warranty.

Discovery Electronics, Inc. reserves the right to modify, improve, or otherwise change the design capabilities or specifications of its detectors without further notice.

INDEX

ASSEMBLY INSTRUCTIONS

After all the parts have been removed from the shipping carton, assemble as shown. Be sure to keep all packing materials for future storage or shipping.



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Battery compartment

Cave or Void Search

1 > Set tone adjust to center of normal band.

2 > Set sensitivity to center of normal band.

3> Set ground reject to center of normal band.

4> Set autotune on.

5> Turn power switch to BATT. Ck and read conditon of battery on meter.

6 > Turn to TRACE position if battery checks good.

7 > Hold detector with arm extended and begin search taking care to keep instrument level and at a constant distance from the ground as possible.

SIMPLIFIED TUNING TREASURE FINDER

Searching for a Metal Object

1 > Set TONE adjust to the center of the normal band.

2 > Set SENSITIVITY to the center of the normal band.

3> Set GROUND REJECT to the center of the normal band. 4> Set AUTOTUNE to off.

5> Turn power switch to BATT. CK and read condition of battery on meter.

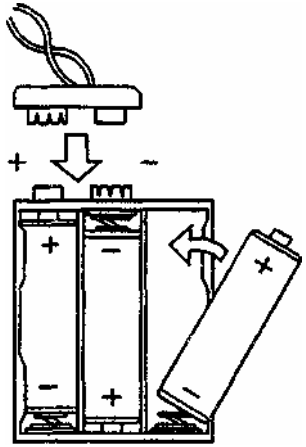
6 > Turn to METAL position if battery checks good.

7 > Hold detector with arm extended and raise and lower 6 inches. If sound changes excessively, adjust according to procedure on page 12. If little change leave in NORMAL range.

8> Switch AUTOTUNE function on and begin search.

BATTERIES

Install the batteries into the battery holder as shown.



Battery Installation

Place flat end or bottom of battery against battery holder spring. Then push top of battery down and into place.

The battery compartment is located on the control panel directly above the Headphone Jack. Remove thumbnuts, attach battery pack to battery lead, replace battery door and thumbnuts.

Alkaline AA batteries are recommended for the Treasure Finder

Battery life will vary significantly depending on the temperature, the number of times the audio is activated by targets, and the type of battery used.

FEATURES

Autotune

The Autotune feature is a "self-adjusting threshold" which maintains a smooth operating threshold, or background "hum" while the detector is operated. Some earlier models could only be operated by frequently pressing the thumb set control to correct upward and downward drifts in the intensity of the background threshold hum. This hum may drift up or down because of ground mineralization changes that are present from one place to another during searching. Even though large changes in ground mineralization will still require adjustment of the ground balance control, the smaller variations can be overcome with the Autotune feature. If the sound is permitted to drift to far from the proper setting, the depth performance of the instrument will decrease somewhat leaving some deep targets undetected. To activate the autotune feature, simply move the switch to the "FAST" or "SLOW" position.

Ground Reject

A unique feature of the Discovery Treasure Finder is its' ability to cancel the effects of ground mineralization. This allows the detection of objects that would otherwise not be able to be detected because of the presence of mineral in the soil. While not all locales are effected by this

Caves & Voids continued...

Operation in the TRACE mode will produce a positive sound for all non-ferrous metals such, such as gold or silver, and will produce the same response from voids, such as a cave. When a ferrous target, such as as iron, is encountered, the sound will respond by going quiet. The same is true if there is heavy iron mineralization.

Since the ground rejection is not affected in the TR/TRACE mode, leave the GROUND REJECT control at the NORMAL range. Because ground mineralization is not cancelled, the TR/TRACE mode does not achieve the depth that can be expected in the METAL mode.

Discovery Electronics has been manufacturing the two-box style of detectors since 1981. Other companies manufactured models before this, using the same patents that were acquired by us in 1981. The Treasure Finder, is the *original* two-box unit that has been produced under the original patents. We believe the Treasure Finder to be the deepest searching two-box unit on the market today, and with its' ability to cancel ground mineralization, is the detector of choice for locating large, deep objects. The recent addition of the Tracer making the Treasure Finder a dual frequency unit makes it unecessary to own a separate pipe and cable tracer. The Treasure Finder is truly a versatile detector! **Good Hunting!**

LOCATING CAVES & OTHER VOIDS

1 > Set the MODE switch to the TRACE position.

2> Set the TONE ADJUST, SENSITIVITY and the GROUND REJECT controls to the NORMAL range. The TONE and SENSIVITY control may be readjusted to optomize for the location you hunting in just as was done for the METAL mode.

3> The AUTOTUNE or the non-motion position may be used. Use the one that gives you the smoothest performance and is the most comfortable. If there are rapid ground changes and there is difficulty maintaining a threshold the best choice is the AUTOTUNE. If you are an experienced user of a "two-box" style of detector you may wish to leave the AUTOTUNE off.

A constant position with no changes in elevation with respect to the ground is necessary to avoid false indications.

It is not recommend that you search in the TR mode unless you are looking for changes in ground density. Again, make sure that the Treasure Finder is maintained in as constant a position above the ground as possible.

phenomena, many will find this a very useful feature because of its' increased depth of detection in very difficult soil.

Dual Modes

The Discovery Treasure Finder has aTR/TRACE mode in addition to the all Metal mode. The TRACE mode is not affected by the ground balance control and responds to every change in soil conditions. This allows the unit to detect voids and holes in the ground such as caves. Unlike earlier models, the Treasure Finder requires no special nulling procedure which was tedious and little understood with the result that it was often improperly used. The Treasure Finder is factory adjusted and is automatically activated when the selector is moved to the TR mode.

A&S Company

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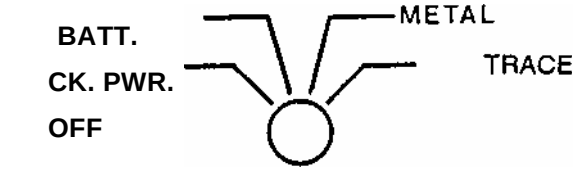
DESCRIPTION OF PANEL CONTROLS



Mode Switch

PWR OFF - The first position on the Mode switch is the Power Off setting. Be sure the switch is returned to this postion after using the detector. Failure to do so will result in the batteries being discharged.

BATT. CK. - The second postion is the Battery Check. This position is used to determine the condition of the batteries which can be read on the meter.

METAL - The third position is a search mode. In this mode the ground balance is in operation and all metal objects such as gold, silver, coin caches, iron chests, or even a septic tank can be detected. The metal mode will allow the greatest ground penetration and is the first choice for maximum capability.

TR/TRACE - The fourth position of the Mode switch is designated TRACE. In this mode the ground balance is non-functional, and the Treasure Finder responds to all ground mineralization changes. Because voids such as holes

press the thumb set control to its' momentary position briefly to bring the meter back on scale. Continue to cross the target in the same direction and repeat the pressing of the switch. There will be a point where the meter reading and speaker tone will "peak" out and start to drop back down. It is at this peak that the front loop is over the buried metal object. Pressing and releasing the momentary postion of the switch will cause the target to appear to shrink making pinpointing easier. The AUTOTUNE allows the pinpointing to take place automatically.

LOCATING BURIED METAL OBJECTS

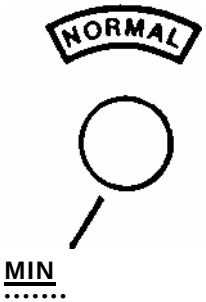
The most efficient way to search an area is to use a grid-like pattern over the area selected. To minimize the chance of missing objects the maximum distance between grid lines should be no more than 6 feet. Make several passes in one direction, then turning 90 degrees, search the same area to assure that a buried object is not missed.

Sometimes deeper targets will appear toward the rear of the Treasure Finder However the difference will usually be no more that 3 or 4 inches from the front loop, even for the deepest target.

The volume of the tone will increase and the meter will read higher as the instrument is passed over a buried metal object. If the target is close to the surface, the meter may reach the maximum on the scale and the tone will no longer increase in volume. Remember to keep the detector in motion when using the Autotune position when trying to locate the center of a target. If the detector is held motionless over the target, the sound will fade. A system of criss-crossing at 90 degrees will aid in pinpointing the center of the target.

In the AUTOTUNE off position, a surface target can appear to be very large, which is normal. Now the target must be "narrowed down" to determine its' location more accurately. Start to pass over the target from one direction, when the meter goes "off scale"

or caves have a distinct absence of mineralization, the TF responds by an increase in the sound. Usually ground density changes are detected as very broad response indications, and will change according to the operator's position relative to the ground density changes. If the sound decreases of course this would indicate an increase in mineralization. This mode will allow the detection of caves and other voids where treasure might be hidden. The use of this mode requires a very carefully planned search pattern, paying particular attention to broad changes in the sound. Marking the sites of each occurance in a controlled search pattern will help in the location of these anomolies.



TONE ADJUST

This control adjusts the audio tone volume of the background noise, commonly called "threshold". To adjust this to optimum, the sound should be barely audible. When using headphones the control will be set lower than when using the speaker. It may be necessary when using the speaker where the environment is noisy to use a higher setting. Generally, the lower the setting, the deeper the detection.

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SENSITIVITY

This control adjusts the sensitivity or detection depth of the detector. The best position is in the "NORMAL" range of the control for most searching conditions. This will provide more than adequate depth with the most stability. If ground or interfering radio/electrical signals cause erratic behaviour (extreme fluctuations of threshold tone) the sensitivity control should be set toward the MIN setting. If greater depths are required, the sensitivity control may be advanced further clockwise. Caution should be excerised when increasing beyond the NORMAL range. If the detector operates erratically because of this higher setting, the response of deeper targets may be missed. The NORMAL range offers the optimum setting which will give smooth operation allowing deep targets to be heard clearly.

Activate the Autotune function and begin searching. However, if the tone does change significantly, leave the Autotune off, and precede in the following manner:

3> *ti* the tone and meter reading went *down* when the instrument was raised, the GROUND REJECT control needs to be moved slightly in the counterclockwise (-) direction. Lower the unit back to arm's length, press the thumb set control to the momementary position to retune, release and again raise the detector by 6 inches. If the tone continues to go down, repeat the procedure until the tone and the meter remain more or less the same in both positions. If the tone and meter reading go *up* when the TF is raised the GROUND REJECT is too far toward (-) and must be turned clockwise toward (+). The same procedure of raising and lowering is done looking for the same result of minimal change between a raised or lowered position.

The ground reject procedure becomes more critical as the sensivity is increased. The SENSIVITY control does not need to be advanced past the NORMAL range for most applications. If the GROUND REJECT procedure cannot be accomplished as outlined above, try moving to a different site as you may be over a buried metal object.

TREASURE FINDER OPERATION

METAL MODE

1> Set the TONE ADJUST, SENSITIVITY, and GROUND REJECT control knobs to the center of the NORMAL range. Set the AUTOTUNE control to its' FAST or SLOW position.

2 > Turn the MODE control to the BATT. CK postion and check the meter to determine the condition of the battery pack. Then turn the MODE switch to the METAL position. The Treasure Finder will operate with these settings in the NORMAL range in most locations. However, to see if further adjustment is needed for ground mineralization precede as follows:

GROUND REJECT PROCEDURE

1 > Set the Autotune switch to the off, or middle position. Make sure that the detector is well away from all large metal objects such as cars, pipes, rebar, etc. Remove all metal objects from your person such as belt buckles, car keys, watches, knives, etc.

2> Hold the instrument at arms lengths at your side in a comfortable carrying position, resulting in a distance of approximately 18 inches from the ground, press the thumb set control in the handle to the momentary position and release. The threshold tone is heard and the meter will indicate at approximately "3". Raise the instrument approximately 6 inches. If the tone changes little or none the setting is adequate for searching that area.

Panel Controls continued...

Ground Reject

GROUND REJECT

This control is only effective when the METAL mode is used. It is adjusted to cancel out the mineralization in the ground and allow for maximum penetration. For higher mineralization the control is rotated towards the (+) sign and subsequently towards the (-) sign for reduced mineralization. The method to use for adjusting this control is covered under the section on OPERATION. Again, this control is only effective in the METAL mode. When using the Treasure Finder '* to hunt in the TR/TRACE mode, the GROUND REJECT should be set in the NORMAL range. Finally, be sure that the AUTOTUNE control is off, or set to the middle position, when adjusting the GROUND REJECT control.

Headphone Jack

The speaker is automatically disconnected as soon as the headphones are plugged in. Use of a headphone will produce maximum detection depth and longest battery life. Most headphones with 1/4" plug may be used.

ADDITIONAL CONTROLS

OFF
(NON MOTION)

FAST SLOW

Autotune

(MOTION) - (MOTION)

AUTOTUNE

The Treasure Finder features an Autotune function that is conveniently located on the control panel and is quickly activated or disabled with a flip of the toggle switch. As mentioned in the section on Features, when the Autotune is activated it enables the Treasure Finder to operate very smoothly over small changes in ground mineralization that result in the threshold increasing or decreasing in intensity. It is necessary to keep the detector in motion while the Autotune is in operation. Standing still over a target will result in the signal slowly fading away.

With the switch at the center position, or OFF, the Autotune ceases functioning. The GROUND REJECT is the only control that now compensates for the ground mineralization. If the ground mineralization does not change too rapidly this mode can be used without the need to maintain motion of the detector. You may stand over the target without the signal gradually diminishing. It will be necessary (when not over a target) to periodically press the thumb set control to the momentary postion in order return the sound to its original "theshold" setting.

Additional Controls continued...

Thumb set

The thumb set control is located at the tip of the earring handle. When using the Treasure finder 900 without the Autotune feature, the control may be pressed to the momentary position quickly with the loop over a target reducing the intensity of the signal making it easier to pinpoint. Further discussion of the use of the thumb set control is found in the Operation section.