

Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

23g

Metal Detector with Arm Rest



67378

Visit our website at: <http://www.harborfreight.com>
Email our technical support at: productsupport@harborfreight.com

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.






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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠ WARNING

Read this material before using this product. Failure to do so can result in serious injury. **SAVE THIS MANUAL.**

WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	Addresses practices not related to personal injury.

General Power Tool Safety Warnings



WARNING Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your battery-operated (cordless) power tool.

1. Electrical safety

Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

2. Personal safety

a. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.

b. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

3. Power tool use and care

a. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

b. **Remove the batteries from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

c. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

d. **Maintain power tools. Check for misalignment or binding of parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.

4. Service

a. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

Metal Detector Safety Warnings

1. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

2. Handle Tool carefully at all times. Dropping Tool can cause damage to circuit boards and housing, which can cause the tool malfunction or failure.

3. Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries. Position batteries in proper polarity. Do not use swollen or leaking batteries.

4. Wear ANSI-approved safety goggles and heavy-duty work gloves when assembling and digging holes.

5. **Consult local regulations before using detector, digging, or taking any findings.** Obtain property owner's permission before detecting on their property.
6. **Only use and store in normal temperature environments.** Extremes in temperature can shorten effectiveness of electronic devices and melt or damage plastic parts.
7. **Avoid electrical shock.** Any metal detector may discover underground power lines, explosives or other items which when struck could cause personal injury. Do not use this product in areas where there might be underground electric lines or pipes buried at shallow depths. Never search in military zones where bombs or other explosives may be buried. Avoid striking any line known or suspected to be carrying electric power. Do not search any pipeline, particularly if it could contain a flammable gas or liquid. In areas of uncertain conditions, use reasonable caution before using the Tool. If there is any question about a condition being safe or unsafe, do not operate the Tool.
8. **Keep the Metal Detector away from any lights, TVs, computers, and mobile telephones.** These can all cause electromagnetic interference.
9. **Only the Search Coil and black section of the Lower Leg are waterproof.** Do not immerse the unit beyond the black section of the Lower Leg.
10. **Keep the Tool clean.** Wipe the housing after each use. The Search Coil is washable and can be fully submerged. Never submerge the control housing. Protect the control housing from rain, blowing surf and heavy mist. Disassemble the Leg and wipe it clean after use in sandy areas.
11. **Use the right tool for the job.** There are certain applications for which this tool was designed. Do not modify this tool and do not use this tool for a purpose for which it was not intended.
12. **This product is not a toy.** Keep it out of reach of children.
13. **People with pacemakers should consult their physician(s) before use.** Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:
 - Avoid operating alone.
 - Properly maintain and inspect to avoid electrical shock.
14. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.



SAVE THESE INSTRUCTIONS.

Specifications

Electrical Input	6 AA Batteries (not included)
Headphone Socket	3.5 mm mini-jack Socket
Functions	Sensitivity Adjuster; Metal-Type Discriminator; All-Metal Indicator; Tone Adjuster; Volume Control; Target Locator; Low Battery Indicator; Auto Ground Balance; Mode Selector

Setup - Before Use:



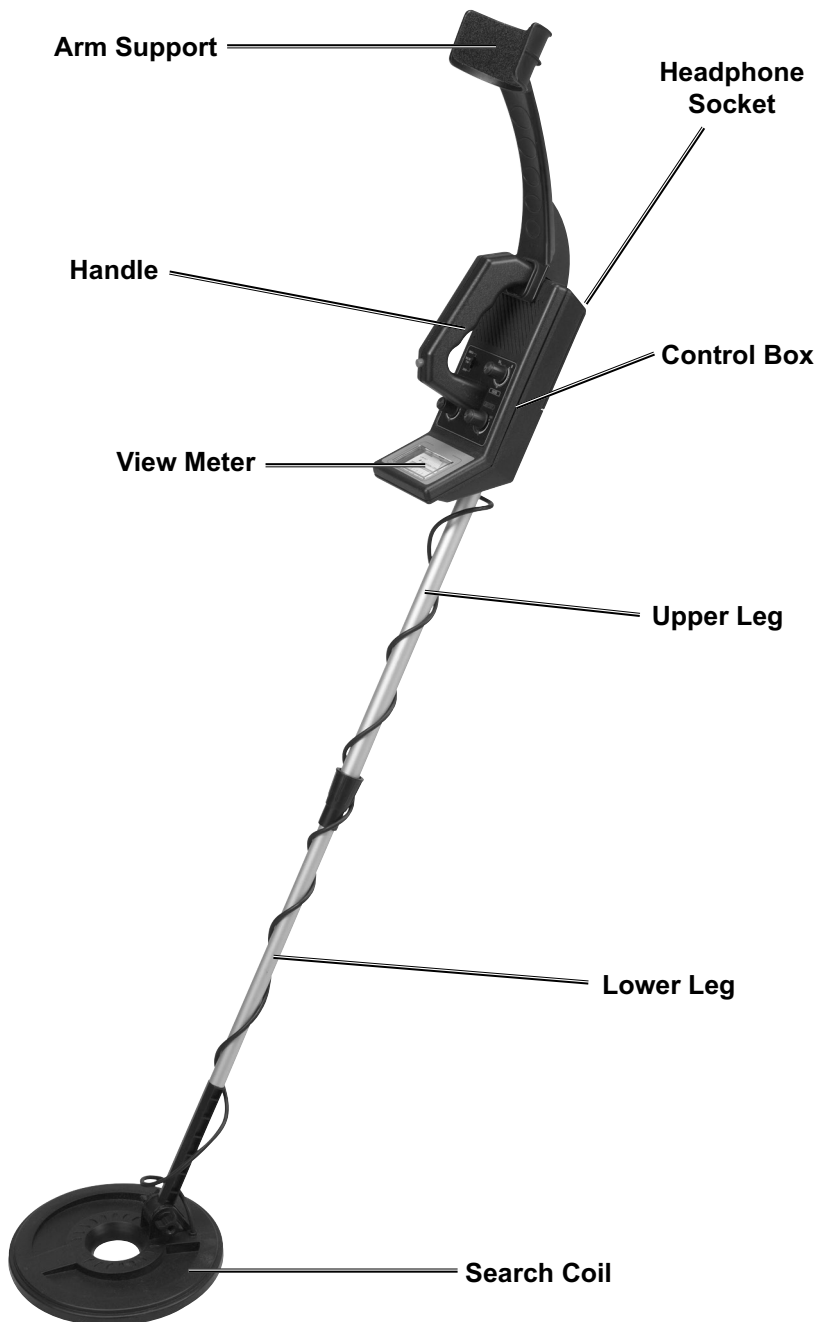
Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION: Turn the Power Switch of the tool off and remove the batteries before assembling or making any adjustments to the tool.

Note: For additional information regarding the parts listed in the following pages, refer to *Parts List and Diagram* on page .

Components



Tool Set Up



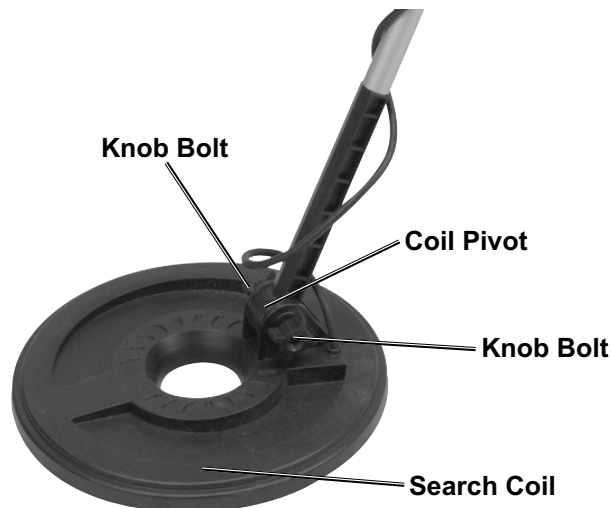
TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off before adjusting tool or installing accessories.

Assembling Leg

1. Loosen the Lock Nut on the Upper Leg.
2. Insert the Lower Leg into the Upper Leg, adjust length, then tighten the Lock Nut.

Adjusting Search Coil

1. Loosen both Knob Bolts and tilt Coil Pivot.
2. Hold the Unit in a comfortable position, adjust the Leg until desired length. Adjust Search Coil until it is parallel with the ground. Tighten Knob Bolts securely, but do not overtighten.

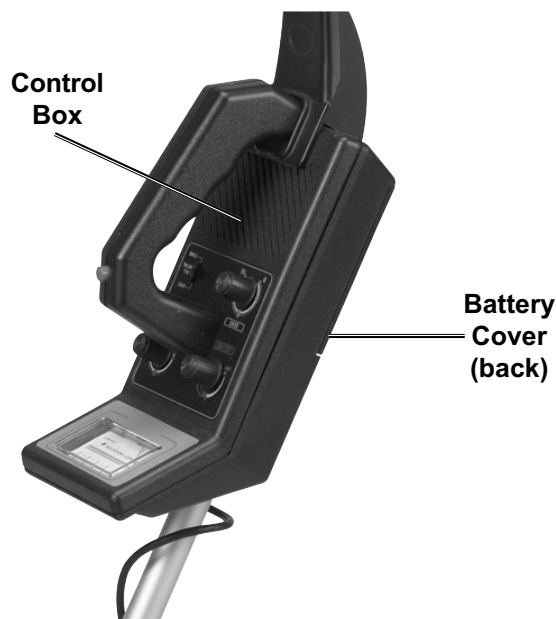


Installing Batteries

1. Turn power off, then remove Battery Cover from the back of the Control Box.
2. Insert batteries and replace the Battery Cover.

Note: Do not install old and new batteries together. Do not install alkaline, carbon-zinc or rechargeable batteries together. Position batteries in proper polarity. Do not use swollen or leaking batteries.

Note: When storing the unit for a week or more, remove the batteries. Extend battery life by using Headphones, as they require less power than the built-in speaker.



Using Headphones

WARNING! TO PREVENT SERIOUS INJURY: Do not wear headphones while operating your detector near high traffic areas. Pay attention to traffic safety.

Insert Headphone Plug into Headphone Socket on the Control Box.

Note: Speaker disables when Headphones are plugged in.

CAUTION! TO PREVENT HEARING LOSS: set the volume level to minimum before using the Headphones, then adjust the level up to a comfortable listening level. **Extended high volume listening can lead to permanent hearing loss.**

Control Panel

On/Off/Volume - Turns on power to the unit and sets the sound level.

SENS - Sets the sensitivity level of the unit.

MODE - Sets detection mode.

Target Button - It is used with ALL METAL mode to pinpoint a target object's location.

DISC/TONE - Adjustment knob for metal identification.

View Meter - Registers signal strength when a metal is detected.



Testing

- Before beginning a search outside, test the unit with samples of metal. Use the following:
 - an iron nail
 - a Nickel
 - a Penny (zinc coin, after 1982)
 - a Quarter (silver coin, 1964 or before)
- Place the Metal Detector on a non-metal surface with the Search Coil facing up. Make sure the unit is away from TVs, computers, or any device that can cause electromagnetic interference.

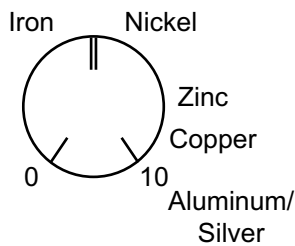
NOTE: Remove any watches, rings, or other metal objects on your fingers and hands.

- Turn on the Metal Detector and set the VOLUME Knob to the middle position. Set the MODE Switch to desired mode.

DISC Mode

- Use the DISC/TONE Knob to search for specific metals by having it **not detect** ("discriminate") other kinds of metals.

DISC/TONE Knob



For example, when the DISC/TONE Knob is set to "0" the Detector will respond to ANY metal object with a sustained tone and the View Meter Needle will move right.

- Set SENS Knob to midpoint. Set MODE Switch to DISC.

- To avoid **iron metals**, set the DISC/TONE Knob to about "11 o'clock."
- Sweep each metal sample 2-3 inches above the Search Coil. The unit will not respond to the iron nail, but should respond to the other samples.
- To avoid **nickel metals**, set the DISC/TONE Knob to about "1 o'clock."
- Sweep each metal sample 2-3 inches above the Search Coil. The unit will not respond to the nickel or iron nail. But it will respond the other samples.
- To avoid **zinc metals**, set the DISC/TONE Knob to about "3 o'clock."
- Sweep each metal sample 2-3 inches above the Search Coil. The unit will not respond to the penny, nickel, iron nail, but should respond to the quarter.

NOTE: The discrimination position of aluminum is similar to silver. So both metals will be detected at the same time. The discrimination position of gold is similar to the nickel setting.

ALL METAL Mode

1. Set MODE Switch to ALL METAL.
2. Sweep the metal samples 2 to 3 inches or more above the center of the Search Coil. The Metal Detector will respond to each with a sustained tone and the View Meter Needle will move right.

NOTE: Be sure to move the samples, as the Detector is in motion mode. Otherwise the Detector will not respond.

NOTE: If needed, adjust the SENS Knob to increase or decrease sensitivity.

Pinpoint

1. Set MODE Switch to ALL METAL and SENS Knob to midpoint.
2. Press and hold the red TARGET Button on the Control Panel. Set the silver quarter about five inches from the center of the Search Coil. The unit will make a continuous long tone and the View Meter Needle will move right.
3. Keeping the coin still, release the TARGET button.
4. Wait two seconds, then press and hold the TARGET button again; the unit's sensitivity will be reduced.

NOTE: Even though the coin's location has not changed, when the unit's sensitivity is reduced the Metal Detector will stop sounding a tone.

5. Repeat the above operation, bringing the coin closer to the Detector and making it sound a tone.
6. Once operating an outside search, you can use the TARGET button to determine the location of the metal.

TONE Mode

1. TONE Mode functions the same as DISC Mode, but instead of ignoring certain metals, the Metal Detector will produce a short broken tone.
2. Set MODE switch to TONE and SENS Knob to midpoint.
3. Set the DISC/TONE Knob to about "11 o'clock" (the iron setting).

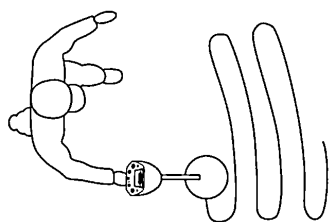
4. Sweep the nail 2-3 inches above the Search Coil. The unit will make a short broken tone and the View Meter Needle will move right. Sweeping any of the other samples will produce a sustained tone.
5. Set the DISC/TONE Knob to "1 o'clock" (the nickel setting).
6. The Metal Detector will create a broken tone for iron and nickel but a sustained tone for other metals.
7. Test the other metal samples and settings before using Metal Detector in an outside search.

Operating Instructions

Once all the proper tests and adjustments have been made, the Metal Detector is ready to be used outdoors.

1. Set On/Off/Volume Knob to On Position.
2. When first searching, set the Mode Switch to ALL METAL and SENS to the highest level.
3. Slowly walk the detection area and slowly sweep the Search Coil back and forth, keeping it level and about 1" to 3" from the ground. Tilting or raising the Search Coil during the sweep will produce false readings. If needed, adjust the SENS Knob.

4. If you hear a beeping noise or see the Needle move to the right on the View Meter, you have located a metal object.
5. Use the TARGET button to pinpoint the object. Then use the DISC or TONE modes to determine what kind of metal it is and whether you wish to dig out the item.
6. To prevent accidents, turn off the tool and remove the batteries after use. Clean, then store the tool indoors out of children's reach.



Tips for Searching in Different Environments

1. There are many factors which influence the sensitivity and accuracy of detecting objects, including the angle, depth, size and oxidation of the target object. Various soil or seawater conditions, and also electromagnetic and electrical interference surrounding the target can also affect readings. Other metal detectors in the area will also cause interference, so when there is more than one unit in use, be sure they are at least 10 yards apart.
2. Some ways to help increase success are:
 - a. If there is interference from similar metal detectors in your searching area, lower the SENS setting to stop the interference.
 - b. If there is interference from electrical cables, TV, radio, or other electrical devices in your searching area, lower the SENS setting.
 - c. When searching in highly mineralized areas, the unit may sound even if there is no metal. Lower the SENS setting, adjust DISC setting, and increase the distance of the Search Coil from the ground until the false signal disappears. To set the DISC setting, place a test metal object in highly mineralized earth or wet sand and adjust the setting before beginning.
 - d. When searching in a trash area, set the DISC to the middle setting so that the unit can reject most invaluable metals such as nails, bottle caps, cans, and small pieces of iron.
 - e. Move all metal digging tools when searching.
 - f. Generally, the higher the **Sensitivity Level**, the worse the detection of the selected metal object will be, as undesired, similar metals will be detected. If needed, lower the **Sensitivity Level** to have better discrimination and detection of the selected metal object without interference from other metals and mineralized earth.

Maintenance And Servicing



Procedures not specifically explained in this manual must be performed only by a qualified technician.



WARNING TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION: Turn the Power Switch of the tool off and remove the batteries from the tool before performing any inspection, maintenance, or cleaning procedures.

Do not use damaged equipment. Have the problem corrected before further use.

Cleaning and Maintenance

1. **BEFORE EACH USE**, inspect the general condition of the tool. Check for:
 - loose hardware,
 - misalignment or binding of moving parts,
 - damaged cord/electrical wiring,
 - cracked or broken parts, and
 - any other condition that may affect its safe operation.
2. Handle the Metal Detector gently and carefully. Dropping it can damage circuit boards and the case, and can cause the Detector to malfunction.
3. **AFTER USE**, wipe external surfaces of the tool with a damp clean cloth, then dry. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the detector.
4. If storing Metal Detector for more than a week, remove batteries.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Unit displays or sounds without a target.	<ol style="list-style-type: none"> 1. Metal Detector can receive interference from power lines and other electromagnetic sources. 2. Environmental humidity is very high. 3. Sensitivity Level is set too high. 4. Sweeping the Search Coil to fast or at the wrong angle. 5. Other Metal Detectors in close proximity. 	<ol style="list-style-type: none"> 1. Change search location or remove source of interference. 2. Wait for humidity level to lower. 3. Decrease Sensitivity Level. 4. Use correct operating techniques as described in <i>Operating Instructions</i> on page 7. 5. Change search location or remove source of interference.
Unit does not detect anything.	<ol style="list-style-type: none"> 1. Sensitivity Level is set too low. 2. DISC/TONE Knob set to discriminate target metal (not selected). 3. Search Coil not parallel with ground. 	<ol style="list-style-type: none"> 1. Increase Sensitivity Level. 2. Select correct DISC/TONE setting. 3. Use correct operating techniques as described in <i>Operating Instructions</i> on page 7.
Unit emits multiple tones.	<ol style="list-style-type: none"> 1. Multiple metal types in the search area. 2. Metal cannot be determined (heavily oxidized metal, etc.) 	<ol style="list-style-type: none"> 1. Adjust Sensitivity Level lower to increase discrimination between target objects. 2. Sweep the Search Coil at differing angles.
Unit does not function.	Dead Batteries.	Replace Batteries.



**Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply before service.**

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS DOCUMENT AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Parts List

Part	Description	Qty
1	View Meter	1
2	Control Knobs	3
3	Console Cover	1
4	Meter Cover	1
5	Handle	1
6	Loudspeaker	1
7	Headphone Socket	1
8	Arm Support	1
9	Upper Leg	1
10	Bolt	3

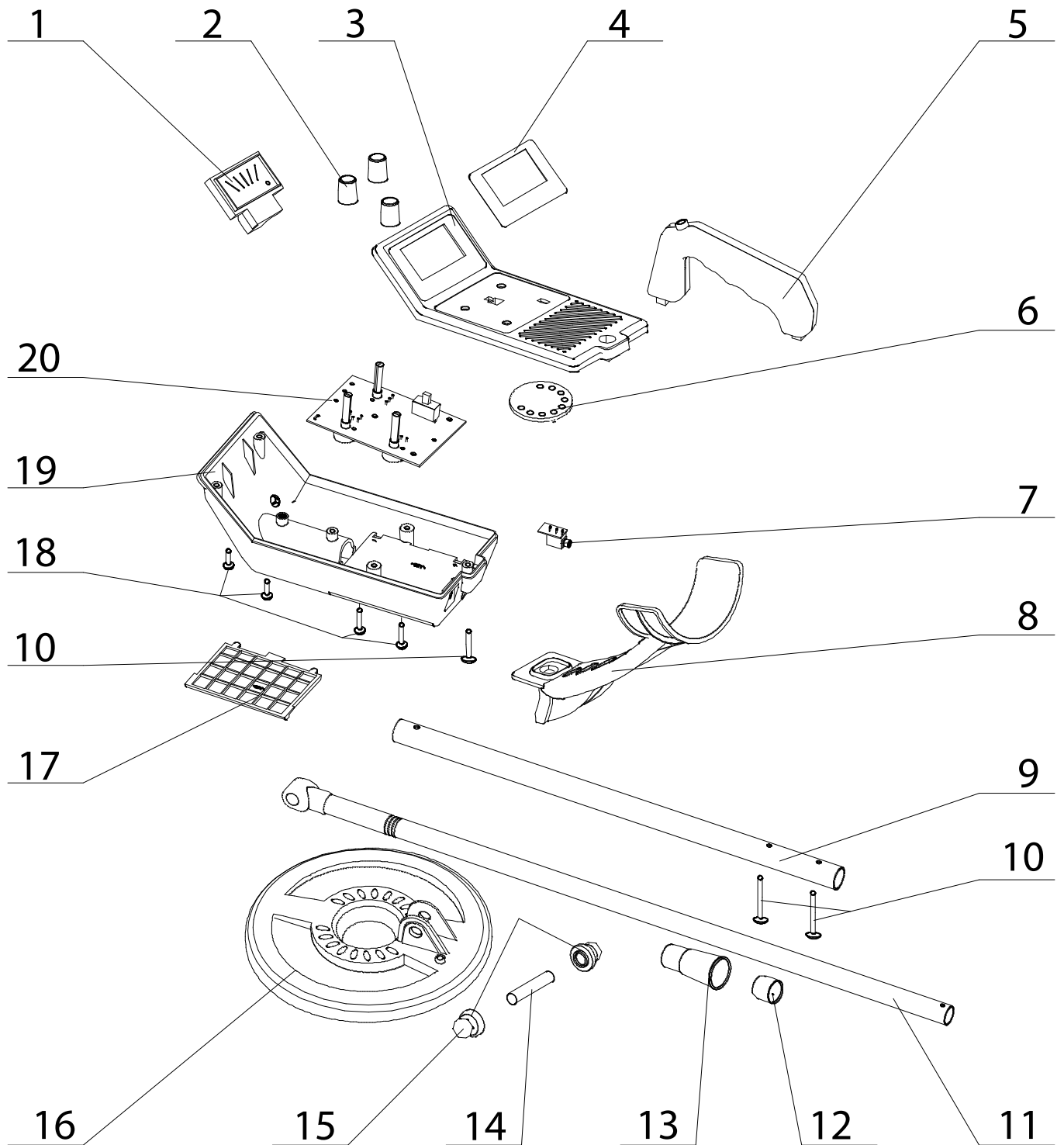
Part	Description	Qty
11	Lower Leg	1
12	Bushing	1
13	Lock Nut	1
14	Coil Pivot	1
15	Knob Bolt	2
16	Search Coil	1
17	Battery Cover	1
18	Bolt	4
19	Housing	1
20	PCB	1

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175498465 when ordering parts.

Assembly Diagram



SAFETY

SETUP

OPERATION

MAINTENANCE

Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

FCC STATEMENT

Changes or modifications not expressly approved by Harbor Freight Tools could void the user's authority to operate the equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.