



Signal Strength and Polarity (-) or (+) are indicated by the two opposite-facing bar graphs. The signal indications start in the center-most short bars and fill outwardly in increasingly larger bars as the signal increases, until maximum strength is reached.

Polarity is indicated by which set of bars are being filled: (-) Negative or (+) Positive Side

The Gain Setting in the lower left hand corner is the "GAIN" bar graph, indicating from left (low) to right (high). By raising the gain, the locator will become more sensitive to a weaker target.

The Battery Icon in the lower right corner only appears when the batteries are getting low. The shape of a battery appears when the batteries are very close to needing replacement. Once this starts flashing, only about 5% of the battery life remains. Always carry spare batteries in the carrying case and be prepared to replace batteries when the battery symbol appears. Extensive use of high volume settings will reduce battery life.



## ML-1 KEYPAD



**Power On/Off:** Press this button to turn the unit ON or OFF

**Speaker Volume:** is controlled by pressing and holding down the ON/OFF button. It will cycle from "Low" through "High." Repeat the cycle until the button is released. Release the button at the desired volume.

### Gain (Sensitivity) Control Down and Up:

Depress the button with the "DOWN ARROW" to decrease the sensitivity and depress the "UP ARROW" button to increase the sensitivity. One click at a time.

**Microprocessor Controlled:** The Volume and Gain setting are set in processor memory. When the unit is turned off, it remembers the last settings, so that when you turn on the unit again, it will already be adjusted to your previous settings.

### Battery Compartment

Loosen the Captive Screw located on the bottom of the electronics box and remove the cover. Two 9-volt battery slots are provided. Since there are no "snap" connections to make, be sure the batteries are placed in the correct "polarity".



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# ML-1 ML-1M Magnetic Locator Instruction Manual



**SubSurface Instruments Inc.**

## SEARCH OR SURVEY WITH THE ML-1

When searching for a target, walk slowly, sweeping the locator back and forth in front of you. If your target is small or very deep, use a higher GAIN setting and walk slower sweeping the locator from side to side slowly.

Normally, a medium setting and a little less than normal walking speed will do fine.

Note: Any metal objects on the operator such as watches pocket knives, large belt buckles and steel-toed boots will interfere if the locator is brought too close to these objects or is operated on the higher settings.

## LOCATOR OPERATION

**Power:** Turn the locator on by pressing and releasing the ON/OFF/VOL button on the keypad. Feel the click?

**Volume:** To change the VOLUME, press and hold the ON/OFF/VOL button and the unit will repeat volume cycles from the current setting. Just release the button at the desired VOLUME.

**Gain:** To change the GAIN (sensitivity) settings, repeatedly press the GAIN ▼ button to “decrease” sensitivity and repeatedly press the GAIN ▲ button to “increase” the sensitivity setting. Do this by one click at a time. (Each click of the button changes the setting up or down by one increment out of eight possible settings).

## “PIN-POINTING” THE TARGET

Upon locating the target using the “Search or Survey” method, you can detect the exact location of a target such as a surveyor’s “PK” or “MAG” nail, by following these steps:

1. Change the GAIN setting to the lowest setting that will still define the target. See GAIN above to change settings.
2. Bring the locator to a vertical position by simply allowing the locator to swing to vertical while you hold the handle loosely.
3. Move the locator back and forth in an “X” pattern over the target.
4. Move the “X” pattern until directly over the target by crossing the “X” at the position of the peak of the signal.

## 7-YEAR WARRANTY

The ML-1 & MI-1M are guaranteed to be free of defect in materials and workmanship for 7 years to the original end user/purchaser.

Only authorized SSI repair personnel can repair units. Abuse, battery acid and water damage are explicitly excluded from warranty.

SubSurface Instruments, its owners, employees and assigns shall not be liable for any action, inaction, injury, property or consequential damage sustained or expenses incurred from the use or misuse of this product.

Liability under this warranty is absolutely limited to repair, service or replacement of the instrument, at the sole discretion of SubSurface Instruments. No other warranty is expressed or implied.



## REPLACING THE BATTERIES

The ML-1 does not have a Low Battery Indicator, so an indication of this condition is “screaming” or not working at all. If this is the case, replace the batteries as explained below.

The ML-1M produces a “flashing” battery icon in the lower right corner of the LCD when the batteries are getting low. You don’t have to change batteries at this time; it is just an indication that only about 5% of battery life is left. Just be sure to have a spare set with you in the carrying case. Then, replace as stated below upon “screaming” or not working at all.

Note: Always remove both 9-volt batteries and discard properly before inserting any new batteries.

1. Upon removal of the old batteries and proper disposal, insert one new 9-volt battery at a time. The contacts are spring loaded for durability and ease of battery change. Insert the batteries properly, look for the “+” and “-” markings in the battery box and insert the batteries accordingly. Ensure the polarity is correct because batteries can be installed backwards.
2. Once the second battery is installed, check immediately for correct operation of the instrument. If it does not operate, either the batteries are in backwards or the batteries are dead. Pull out and reset the batteries in the proper polarity and check for operation again.
3. Once operation is verified, replace the battery box cover.

The Captured Screw in the battery box cover can be turned with a coin. Carefully align the cover holding tabs on the opposite end of the battery box, lower cover onto box and tighten screw. Do not over tighten.

